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MEDICAL EDUCATION AND ITS RELATION TO RURAL MEDICINE

CHAIRMAN'S ADDRESS *

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During the last quarter of a century there has taken place in this country a remarkable growth in the hospitals, medical schools, laboratories, special clinics and other health agencies of the larger cities. During the same period not only have the rural communities suffered from a lack of these opportunities, but even the ranks of their practicing physicians have been rapidly thinned, so that many small towns are without the service of a single physician. In 1927, the National Grange, representing 800,000 members engaged in agricultural pursuits, called formally on the American Medical Association to consider seriously the problem of adequate rural medical service.

The grange reported: "There were approximately 33,000 physicians in places of 1,000 or less in the United States in 1906. In 1924, this number had been reduced to 27,000, showing an actual loss of 6,000 rural physicians in eighteen years. More recent investigation shows that almost one third of the towns of 1,000 or less throughout the United States which had physicians in 1914 had none in 1925."

Studies sponsored by the General Education Board have also revealed that the balance in the distribution of physicians has tended to grow more and more unfavorable to the rural regions.

It has been shown that the average age of physicians in rural communities of this country is 52 years, a fact which we have confirmed in our section of New York State. This means that the greater part of the medical work in such communities is being borne by veterans whose years of service are numbered, for the average age of an American physician at death is stated to be 62 years.

There are a number of factors that have been instrumental in bringing about this special medical problem in the smaller towns of this country. Chief among the causes is the greatly increased ease of transportation resulting from the introduction of the automobile and good roads. At present the country doctor finds that many of his patients are prone to motor into the city for special professional advice, calling on him only at night, in bad weather or in emergencies. He thus often has left a clientele composed largely of patients of limited means, while calls for him to attend the poor and needy are increasing as the number of fellow physicians in his territory diminishes.

In contrast with these conditions, the cities hold certain definite attractions for doctors: professional, social, recreational and economic.

The majority of the leading medical schools, moreover, have tended more and more toward the training of specialists, who find the city their natural field, rather than the rural districts.

Lastly, the actual cost of a medical education may deter the young graduate from settling in the country.

It has been suggested that the plight of the rural communities is directly attributable to the reduction of the total number of medical schools from 162 in 1906 to 80 in 1927. A lowering of standards by medical schools thereby reducing the cost of medical education has been proposed, but this would not improve the situation.

The Albany Medical College has for many years been interested in aiding the solution of the problem of rural medicine. In 1928 the college formulated a five point program which proposed to meet the situation as follows:

1. By giving preference in the selection of medical students to those whose affiliations are in its district, other qualifications being equal.

2. By primarily training students for general practice and properly fitting them at moderate cost for such work.

3. By providing its graduates and other hospital interns with data concerning opportunities and locations where doctors are needed.

4. By cooperating with graduates and other physicians in the large district served by the college, giving them an opportunity to take graduate work, review and advanced courses, either formally or informally, as well as special work in all departments of the medical school.

5. By suitable publicity, informing rural communities of the advantage of employing their local doctor who can care adequately for more than 90 per cent of their ills, and whose cooperation and interest is of the greatest importance in the care of the remaining 10 per cent.

In 1929, a sixth point was added: By cooperating with hospitals in the larger towns of the district so as further to develop the service rendered by these institutions to the surrounding communities.

Success of such an undertaking must necessarily rest on an intimate and accurate knowledge of the actual conditions of rural medicine in the area which is to be served. The first step was the formation of a department of regional extension aided by a grant from the Rockefeller Foundation.

In 1929 and 1930, three specially qualified representatives were sent out by the school to interview personally the doctors in the "service area," rather than resorting to the unsatisfactory method of a questionnaire, the defects of which are so obvious. The purpose

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was to establish friendly personal contacts with the physicians, and, by explaining the program to them, secure reliable facts regarding the conditions of medical practice. Information was sought on the following five points:

1. How many physicians are required for adequate medical service to this region?
2. Is the present number sufficient or insufficient?

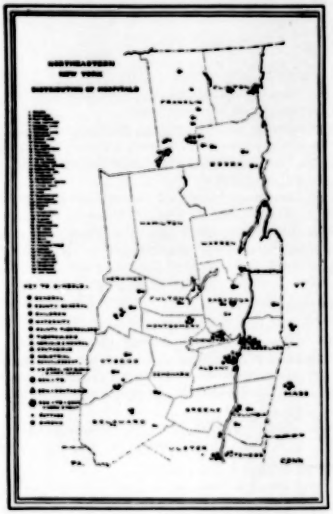

Fig. 1.—Distribution of hospitals in northeastern New York.

3. What will be the requirement for future replacements?
4. What kind of men are needed for successful practice?
5. What course should the college follow to meet these requirements as to numbers and as to qualifications?

The area covered is indicated on the map presented in figure 1. The survey included only those communities which did not possess a hospital. The territory thus naturally divided itself into "service areas," which were those which might logically be covered by a single physician or by a group of physicians. One hundred and eighty-two such areas were surveyed. The total population of these, on the basis of the 1930 federal census, was estimated at 625,509.

In estimating the local requirements of each community it was assumed that one competent and active physician could, under normal conditions, care adequately for 1,500 persons. Special local conditions sometimes caused a variation of this figure. The estimate of the total number of physicians required for the area covered was 377 practitioners 100 per cent active.

One naturally asks how well this requirement is being met. There were 509 physicians living in the areas surveyed, or one physicians to every 1,032 persons, but not all of these were in active practice. Of this total forty-nine were totally inactive because of retirement or poor health, thirty-three were transients coming and going with the summer visitors, and serving this group primarily, while nineteen lived in the country but did not practice there. This leaves only 408 men in these communities who can be counted on for regular medical service (fig. 2).

The estimated total requirement of 377 physicians that was made was based on the assumption that all of this number were 100 per cent active in practice. Our investigators found, however, that the average activity of the 408 physicians in actual rural practice was approximately 80 per cent (fig. 3). The net available active personnel, therefore, was estimated at 321, or 56 less than the theoretical minimum requirement.

It is when the age of the physicians now practicing and the number of replacements needed in the future are considered that the full seriousness of the problem of rural medicine is seen.

Figure 4 shows that 58.9 per cent are over 50 years of age and that 24 per cent are between 60 and 70. Figure 5 shows the estimated time of death or retirement of present practitioners in the rural areas served and the replacements which consequently will be necessary. The truly critical period of replacement of rural practitioners lies ahead in the next fifteen years.

Our investigations have yielded a wealth of material regarding the personal attributes of rural physicians which cannot be gone into in detail. Good health appears to be a dominant characteristic of active rural practitioners under the age of 60 (fig. 6). As was to be expected our study revealed that the rural areas offer virtually no field for the pure specialist (fig. 7); in fact, the nearest approach to specialization is among those who do a limited amount of surgery in addition to general practice. The actual territory covered by such physicians was not found to be as wide as one might suppose despite the coming of the automobile. It was discovered that approximately 85 per cent of the rural practitioners did not regularly practice beyond a radius of 10 miles from their homes (fig. 8).

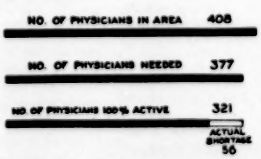

Fig. 2.—Present status in the district.

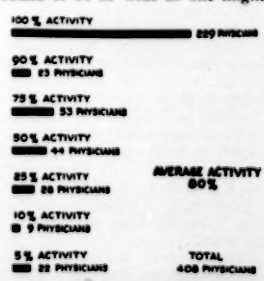

Fig. 3.—Activity or availability of active rural physicians.

Interesting data are shown in figure 9, in which it is seen that approximately three out of every four rural practitioners were themselves country born. Of the 365 from whom information was obtained on the relation between the place of starting practice and the ultimate permanent location, it was found that approximately 60 per cent of the rural practitioners are men who settle in or within a radius of 50 miles of their

home communities (fig. 10). Among those born and bred in the country there was also a far greater preference for country practice (fig. 11). Proportionately the country bred physician appears to be nearly five times as likely to be content to remain in rural practice as does the city bred physician who enters it.

In figure 12 it is seen how large a number of physicians in the area surveyed are graduates of the Albany Medical College: no less than 42.5 per cent, with the University-Bellevue second, furnishing 10.4 per cent.

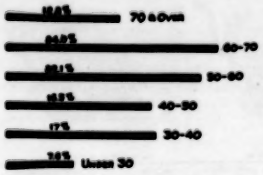

Fig. 4.—Age distribution of physicians in the district.

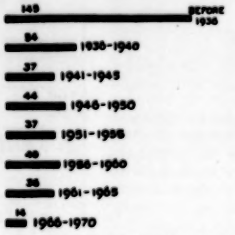

Fig. 5.—Future needs of the district.

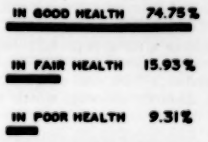

Fig. 6.—Health of active rural physicians in the district.

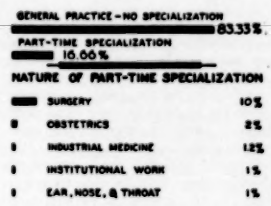

Fig. 7.—Specialization chart of active rural physicians in the district.

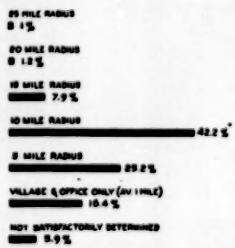
25 MILE RADIUS 1%
20 MILE RADIUS 1.2%
15 MILE RADIUS 7.9%
10 MILE RADIUS 42.2%
5 MILE RADIUS 29.2%
VILLAGE & OFFICE ONLY (AV 1 MILE) 10.4%
NOT SATISFACTORILY DETERMINED 9.9%

Fig. 8.—Average radius of territory covered.

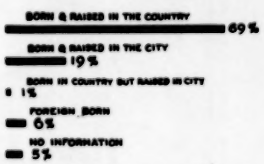
BORN & RAISED IN THE COUNTRY 69%
BORN & RAISED IN THE CITY 19%
BORN IN COUNTRY BUT RAISED IN CITY 1%
FOREIGN BORN 6%
NO INFORMATION 5%

Fig. 9.—Birthplaces of physicians in the district.

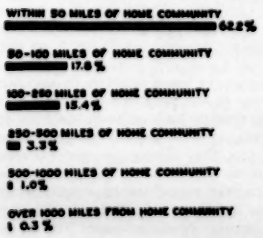
WITHIN 50 MILES OF HOME COMMUNITY 62.2%
50-100 MILES OF HOME COMMUNITY 17.8%
100-250 MILES OF HOME COMMUNITY 15.4%
250-500 MILES OF HOME COMMUNITY 3.3%
500-1000 MILES OF HOME COMMUNITY 1.0%
OVER 1000 MILES FROM HOME COMMUNITY 0.3%

Fig. 10.—Places of initial practice of physicians in the district.

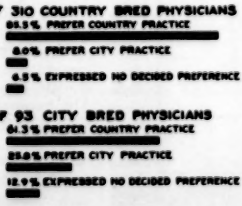
OF 310 COUNTRY BRED PHYSICIANS
85.5% PREFER COUNTRY PRACTICE
8.0% PREFER CITY PRACTICE
6.5% EXPRESSED NO DECIDED PREFERENCE
OF 93 CITY BRED PHYSICIANS
61.3% PREFER COUNTRY PRACTICE
25.8% PREFER CITY PRACTICE
12.9% EXPRESSED NO DECIDED PREFERENCE

Fig. 11.—Preference of rural physicians for country or city practice.

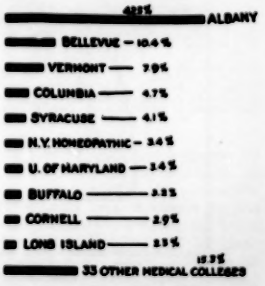

Fig. 12.—Medical colleges supplying the district with physicians.

physician's annual income must be low, the figures actually obtained show that an able practitioner who likes country life has no difficulty in earning a comfortable living.

It is quite evident that the Albany Medical College alone cannot supply the requisite number of new physicians needed during the next five years, as its graduating classes number on the average twenty-five men annually. Actually, approximately one half, or 50 per cent, of our graduates during the ten years from 1916 to 1925, inclusive, entered practice in the cities and in hospital towns of our region, another fourth, or 25 per cent, entered practice in the rural areas of our region outside of hospital towns, and the final 25 per cent entered urban or rural practice outside our region (fig. 13). This means that 6.25 per cent Albany graduates a year entered the rural areas considered in this study. Assuming thirty years as the average life in practice of a physician, this should mean that over such a period the college will

Other factors which were found by our investigators as necessary for success in rural practice were character, pleasing personality, sympathetic understanding of people and businesslike methods—traits which make for success in any field of endeavor in any place, be it country or city.

The data on fees and incomes shows that the average cost of medical care in the rural communities is not high. While this would indicate that the average

place 188 men in these rural areas, the exact number of its graduates in practice within these areas as shown by the survey.

A survey now being made of the hospitals in larger towns of the district reveals an interesting natural growth in the service rendered to the surrounding territory, as computed by the number of patients admitted in the years 1919 and 1929. The Nathan Littauer Hospital at Gloversville is an example. Figure 14 shows the increase in patients cared for in the ten years between 1919 and 1929.

It seems clear that the college, by cooperating with these institutions, may further develop the scope and efficiency of their service to outlying rural communities. Such contacts have already been made with several hospitals.

The extension of the service rendered by such hospitals is a most important step but does not offer the complete solution of the medical care of rural communities. The cost of medical service increases with the distance covered, which necessarily places a limit on the degree to which this method may be employed.

CONCLUSIONS

The survey has shown in a most striking manner the serious shortage of physicians which will develop in the area surveyed during the next fifteen years. Death

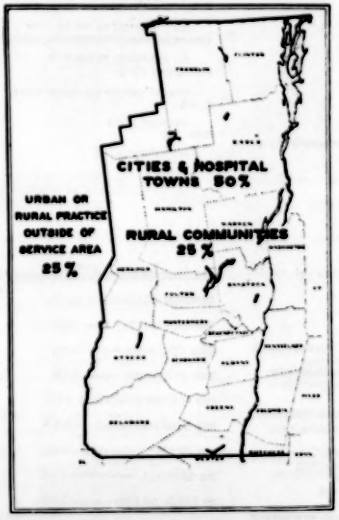

Fig. 13.—Map of northeastern New York showing location of graduates of the Albany Medical College in the Albany Medical College district; total number of graduates, 1916-1925, 211.

and old age are bound to remove 150 of the 408 active physicians.

The most effective inducement to enter rural medical practice seems to be geographic. Those born and bred in the country are much more likely to return there to practice.

From this it is believed that the most certain means by which the college can influence the ultimate location of its graduates is by the selection of its students for admission.

Although the survey has shown that the Albany Medical College cannot alone meet the shortage of rural physicians which may be expected within its district in the future, the efforts of the school may be effective along other lines also.

In addition to the selection and training of students as outlined, the college may further aid in the solution

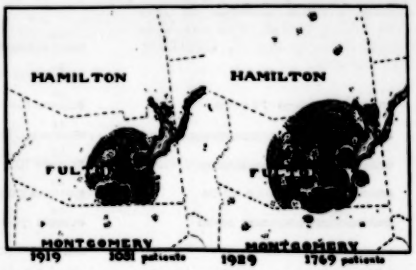

Fig. 14.—Distribution of patients in the Nathan Littauer Hospital, Gloversville, N. Y.: 1919, 1,031 patients; 1929, 1,769 patients.

of the problem of rural medicine by continuing to provide information concerning communities needing physicians. It may assist in holding the men already in the field by giving increased opportunities for graduate study and by encouraging communities through suitable publicity to employ their local doctors. Finally, most effective work in the future may be accomplished by coordinating and developing the clinical and laboratory work of the hospitals in the larger towns of the district, whereby they may be able to render a more efficient service to the communities surrounding them. The county laboratories of the state department of health will be most important links in this development of smaller hospital and laboratory centers.

214 State Street.

THE SURGICAL TREATMENT OF PERICARDIAL SCAR*

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CLEVELAND

Circulatory disturbances brought about by the development of scar tissue in the pericardium came into the domain of surgical therapy two or three decades ago. The accomplishments in this field of surgery are of such a high order that they clamor for general recognition and application. The fact that patients, bedridden because of circulatory failure, have been restored to active life makes it just as incumbent on the physician to recognize circulatory disturbances due to pericardial scar as to recognize appendicitis, intestinal obstruction or any other condition that can be cured by operation.

The treatment of adhesive pericarditis by operation was suggested by Weill and by Delorme at the close

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* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

* Read before the Section on Surgery, General and Abdominal, at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 12, 1931.

of the last century. Their suggestions to incise the adhesions or to decorticate the heart were not greeted with approval until 1910, when this operation was actually carried out by Hallopeau.[1] A simpler type of operation for the relief of pericardial adhesions was suggested by Brauer in 1902. This operation consisted of the removal of the bony precordium, so that the heart tugged on soft yielding structures. Since the Brauer operation of cardiolysis was less of a hazard, it has been carried out more frequently than the Delorme operation of decortication.

A sharp line of distinction has been drawn between these two types of operation. To the one group belong the cases of intrapericardial adhesions, and for these the Delorme operation is indicated. To the other group belong the cases of extrapericardial adhesions, and for these the Brauer operation is indicated. So sharply has this line of distinction been drawn that one is led to believe that the pathologic processes occur in separate and distinctive form. This line of distinction, I believe, has been drawn altogether too sharply.

EXPERIMENTS

These two types of disorder have been produced experimentally in dogs.

Extrapericardial Adhesions.—In this group of experiments, extrapericardial adhesions were produced by suturing the pericardium to the lateral wall of the chest. Areas of the pericardium from 5 to 10 cm. in diameter were sutured to the left thoracic wall.

Circulatory failure did not develop in any of these experiments. Indeed, the minute volume output of the heart, as determined by the Fick method, showed little if any measurable change after the pericardium was sutured to the thoracic wall. Studies have not been carried out to determine whether or not circulatory failure can be produced by adhesions between the pericardium and other portions of the thoracic wall or to the diaphragm, or by combining extrapericardial adhesions with intrapericardial adhesions. Such studies should be carried out.

Adhesions between the normal pericardium and the precordial thoracic wall do not in themselves result in circulatory failure. I do not imply that such adhesions are not a factor in bringing about circulatory failure but rather that such adhesions must be accompanied by a more generalized fibrosis of the pericardium. The Brauer operation of cardiolysis is limited to the resection of the bony precordium. This operation, therefore, may be expected to relieve the heart of this particular impediment but, if this impediment is only a part of a more generalized fibrosis, the relief afforded by this operation is only partial rather than complete.

An analysis of the results obtained by the Brauer operation is instructive. In 1928, Smith and Liggett [2] compiled 107 cases in which this operation had been performed. The mortality within the first three months was 20.6 per cent; improvement was noted in 84 per cent, and 29 per cent of the patients became self supporting. Valvular disease was present in 29 per cent. If circulatory failure was due partially to valvular disease in 29 per cent (thirty-one cases), there remained 71 per cent (seventy-six cases) in which the circulatory failure was due presumably to pericardial cirrhosis. A result little short of complete circulatory restoration might have been expected in this group of 71 per cent, whereas only 29 per cent (thirty-one patients) became self supporting. If both the group that died during the first three months and this group complicated with valvular disease were subtracted (undoubtedly there is some duplication of cases here) from the total number of cases, there would still remain fifty-five cases or more that should have been given a result little short of complete circulatory restoration. It is apparent, therefore, that the Brauer operation, while it gives relief in a high percentage of cases, falls short in effecting complete or almost complete circulatory restoration.

Intrapericardial Adhesions.—Intrapericardial adhesions were produced by a variety of methods. These methods consisted of traumatizing the surface of the pericardium by the direct application of hot physiologic solution of sodium chloride, the hot cautery, tincture of iodine, alcohol, or ether. In some experiments the pericardial surface was rubbed with rough gauze, or multiple incisions were made in the myocardium, or radium emanation seeds were placed in the pericardial cavity, or purulent pericarditis was produced by the introduction of bacteria. Adhesions between the heart and the pericardium were readily produced by these methods. These adhesions were either localized or generalized. In some of these experiments, cardiac tamponade was produced by the collection of fluid or blood in the pericardial cavity. In none of the experiments did circulatory failure develop from the cardiopericardial adhesions, and it was concluded that intrapericardial adhesions in themselves were not an important factor in producing circulatory failure.

Fig. 1.—Graft of muscle on heart. A method for the control of bleeding from the surface of the heart. A small graft of muscle is loosely sutured over the bleeding point. It is possible with this method to control bleeding from a coronary vein without damaging the adjacent artery. *a* shows method of placing graft; in *b* the graft is sutured over the vein.

The results of these experiments are given ample corroboration by the pathologists. Bands of adhesions between the heart and the pericardium are not uncommonly found at necropsy, and these bands of adhesions had not produced any signs of circulatory embarrassment. Indeed, the pericardial cavity may be obliterated,

1. Hallopeau, M. P.: Un cas de cardiolyse, Bull. et mém. Soc. de chir. de Paris **47**: 1120, 1921.
2. Smith, E. S., and Liggett, H. S.: Cardiolysis for Chronic Mediastino-Pericarditis, Proc. Internat. Assemb. Inter-State Post-Grad. M. A., North America (1928), (1929), pp. 489-502.

as so frequently happens after the subsidence of purulent pericarditis, without producing any apparent circulatory change.

If extrapericardial or intrapericardial adhesions in themselves produce little or no circulatory embarrassment, what factor or combination of factors is necessary?

The Pick Syndrome Produced Experimentally.—Several years ago I injected surgical solution of chlorinated soda (Dakin's solution) into the pericardial cavity of a patient who had purulent pericarditis, for the purpose of sterilizing the pericardial cavity. As soon as the solution entered the pericardial cavity the patient had a peculiar response. His expression was one of great anxiety; extrasystoles occurred, and the irrigation was discontinued. The effect of surgical solution of chlorinated soda was then studied experimentally on dogs. The immediate reaction to the solution in the normal pericardial cavity consisted of hemorrhage due to erosion of blood vessels. The delayed reaction consisted of cardiopericardial adhesions and the formation of laminated scar tissue over the heart. In the course of several weeks the typical Pick syndrome developed.[3]

Dr. R. A. Griswold and I[4] carried out a series of experiments with the purpose (1) of making a study of the development of the Pick syndrome and (2) of relieving the condition by operation.

The following clinical observations were made: The first indication that the syndrome was developing was an elevation of the venous pressure. We found that the venous pressure was the most reliable index to the development of this condition. The elevation of venous pressure first appeared several weeks after the solution of chlorinated soda was introduced into the pericardial cavity. The rise usually was a gradual development from a few centimeters to the high terminal level of 24 cm. of physiologic solution of sodium chloride. The normal pressure in the jugular vein of the dog, where these measurements were taken, is zero. Coincidentally with the first manifestation of a rise in venous pressure there was a decrease in the minute volume output of the heart. When the venous pressure reached the level of about 8 to 10 cm. of physiologic solution of sodium chloride, ascites developed. Weakness, dyspnea and anorexia could be noted. The ascites in every experiment became progressively more marked. After the ascites was well developed, subcutaneous edema, hydrothorax and pulmonary edema appeared. In these experiments, subcutaneous edema, hydrothorax and pulmonary edema were terminal phenomena. At this stage of the experiment, weakness and dyspnea were marked, the pulse was small and rapid, and the minute volume output of the heart had fallen to about one third of the normal level. In tapping the ventricles for specimens of blood, resistance was repeatedly encountered as the aspirating needle penetrated the pericardium. So constantly was this sense of resistance recognized that were it not for the possibility, slight as it is, of penetrating a coronary vessel by the needle we would advocate this procedure as an aid in diagnosis in the human being when the diagnosis is obscure. Another observation made during the development of polyserositis was a change in the shape and contour of the heart—the heart, as shown by roentgenograms, becoming globular and smaller than normal. Not infrequently the systolic-diastolic excursion of the heart appeared to be decreased under the fluoroscope. Changes noted in the electrocardiogram were slurring and notching of the Q-R-S complex and a decrease in voltage. Usually the electrical axis of the heart showed a shift with change of position but, in a few experiments in which the pericardium was adherent to adjacent lung and thoracic wall, the electrical axis showed fixation. The Pick syndrome did not develop in every experiment but, in those experiments in which it developed, the condition went on to a fatal termination unless relieved by operation.

Fig. 2.—Result of pericardiectomy: *A*, before operation was performed; the abdomen was distended with fluid, and the dog was weak. *B*, seventeen months after the operation; the dog appears normal.

These experiments afforded abundant material for study of the pathologic physiology of the Pick syndrome. The necessary factor in every experiment was the compression effect of scar tissue on the heart. Primarily the mechanism was an obstruction to the filling of the heart, but another factor undoubtedly was the impairment of the myocardial circulation brought about by interference with coronary blood flow.[5] Adhesions between the heart and the pericardium were, in themselves, of little or no significance in the development of the Pick syndrome. The pericardial cavity could be obliterated by adhesions but, if the pericardium was not thickened, circulatory failure did not develop. On the other hand, the Pick syndrome developed without any adhesions between the heart and the pericardium, the latter structure being thick dense scar tissue around the heart but not adherent to it. The term adhesive pericarditis therefore is not strictly applicable to the pathologic condition in the Pick syndrome.

In some of our experiments, adhesions to diaphragm, pleura and mediastinum prevented any shift of the

3. Beck, C. S.: The Effect of Surgical Solution of Chlorinated Soda (Dakin's Solution) in the Pericardial Cavity, Arch. Surg. **18**: 1659-1671 (April) 1929.

4. Beck, C. S., and Griswold, R. A.: Pericardiectomy in the Treatment of the Pick Syndrome; Experimental and Clinical Observations, Arch. Surg. **21**: 1064-1111 (Dec.) 1930.

5. Scott, R. W.; Feil, H. S., and Katz, L. N.: The Electrocardiogram in Pericardial Effusion: I. Clinical, Am. Heart J. **5**: 68-83 (Oct.) 1929.

heart with a change of position. Another finding of interest in these experiments was the fibrinous or fibrous exudate that developed over the surface of the liver and also between the lobes of the liver. It resembled the classic "zuckergussleber" described by Curschmann. Numerous theories have been given to explain the iced liver or iced spleen of Pick's disease, but the mechanism of its formation remains obscure. Our method for the production of the Pick syndrome will afford material for study of this problem.

After having produced this condition experimentally, we attempted to relieve it by operation. In our early experiments, we were novices in the performance of the operation, and the mortality was high. Many important points were learned and I shall try to enumerate these.

In the first place, the circulatory reserve may be so cut down that the animal dies with the induction of anesthesia or from opening the chest. External heat was applied to the dog before, during and after the operation. Fluid was aspirated from the abdomen and chest before the anesthetic was started. The operation was carried out with a trained operating team. We followed the suggestion of Schmieden[6] to excise the scar from the left ventricle first, because the right ventricle may dilate acutely if the left ventricle is not ready to receive the increased load of blood. An incision is made without delay over the left ventricle away from the anatomic position of the major coronary vessels. The incision is carried through the laminated scar to the myocardium. The myocardium is sometimes blanched by invasion of scar tissue and it is easy to go too deep. On the other hand, if the dissection is not deep enough, a layer of epicardial scar may be left on the heart and the operation fails to relieve the heart. After the scar is incised down to the myocardium, it is dissected laterally from the ventricle. In our experiments a line of cleavage usually existed, so that the separation could be carried out by blunt dissection. This was not always the case, however, and occasionally the epicardial scar was so intimately adherent to the myocardium that it was impossible to remove it by blunt dissection, and sharp dissection was necessary. These experiments provided us with an invaluable experience in the use of sharp dissection on the surface of the heart, an experience that served a useful purpose later in our human case.

We learned to control the bleeding from the surface of the heart by placing a suture in the myocardium and tying it loosely over a small graft of muscle (fig. 1). We found this method of repair valuable in controlling a constant oozing of blood from the myocardium. It may be pointed out that bleeding from the myocardium is sometimes difficult to control by suture alone. Cardiac muscle is so friable that slight tension on the suture may cut the muscle and make the bleeding worse. According to Churchill,[7] the operation was abandoned in four human cases because of tearing the right ventricle.

This method is also valuable in stopping hemorrhage from a small rent in a coronary vein. It is difficult to ligate the vein without inflicting injury to the adjacent coronary artery, and it is possible to apply sufficient pressure from a muscle graft to stop the venous bleeding and at the same time not occlude the circulation through the artery. So far as we know, this method for the control of bleeding from the heart has not been described before.

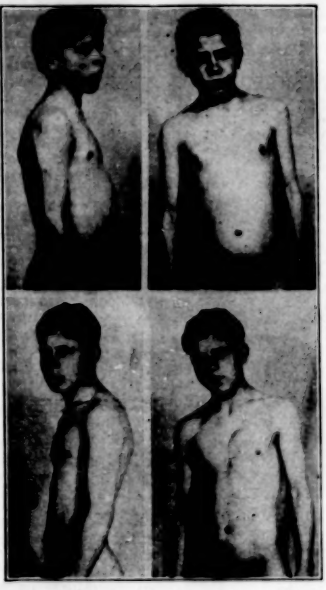

Fig. 3.—Appearance of patient: *A*, before pericardiectomy; *B*, eighteen months after pericardiectomy.

The excision of scar should be made as complete as possible. Schmieden called attention to the danger of penetrating the auricles and advised against separating the scar from the auricles. We did not encounter this complication in the experiments but, after the resection of the scar was carried out, we frequently found the auricles glazed over and rounded off by a thin scar that we did not attempt to resect. I should like to emphasize the importance of freeing the venae cavae where they penetrate the pericardium and where they enter the heart. In one of our experiments the condition was relieved only temporarily, because a segment of scar in the region of the inferior vena cava was freed but was not resected. Later it bound down and obstructed the inferior vena cava and produced ascites. This experiment emphasized the importance not only of separating the scar from the heart but also of completely excising the scar, especially over the right auricle where the venae cavae enter the pericardium.

On the basis of experiment, the improvement in the circulation following excision of the scar was nothing short of brilliant (fig. 2). As soon as separation of scar from the myocardium was effected, the enfeebled movements of the heart became strong and forceful. The heart actually opened itself out of its cramped quarters, dilated to fill with blood, and became a much more efficient pump. When this dramatic point was reached, the operation lost its hazard. While most of our operations of pericardiectomy terminated fatally, we feel that the majority of the failures were due to technical defects of the operation. These technical difficulties were largely overcome by experience. It was no mean task, if I may say so, to carry a dog through this operation. The operation on our human patient proved easier than did most of the experimental operations.

6. Schmieden, Victor: The Technic of Cardiolysis, Surg. Gynec. Obst. **43**: 89 (July) 1926.

7. Churchill, E. D.: Decortication of the Heart (Delorme) for Adhesive Pericarditis, Arch. Surg. **19**: 1457 (Dec.) 1929.

With one exception, the dogs that survived the operation remained in excellent health. They have lived about eighteen months since operation and they remain cured. Immediately after operation, the heart lost its globular contour and enlarged to its normal size and shape. The electrocardiogram became normal. The venous pressure and the minute volume output of the heart returned to their normal levels. The permanence and the completeness of the cure is difficult to understand because, naturally, one would expect further formation of scar tissue. We do not want to kill any of the animals for the specimens, and a follow-up study of these experiments will have to await the future. The exception previously referred to was an experiment in which the animal developed polyserositis three times. Twice the dog was relieved by operation but, unfortunately, a third resection was not carried out. A layer of epicardial scar had formed after the two resections had been done.

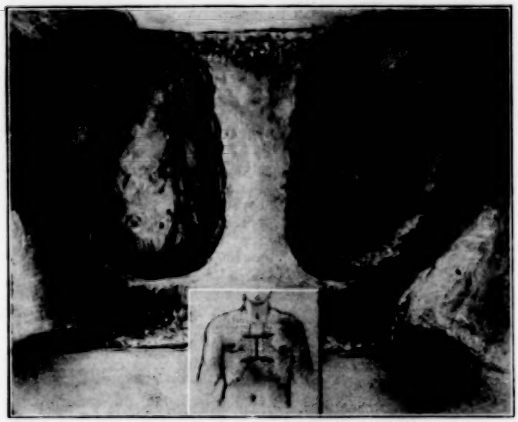

Fig. 4.—A new exposure for resection of the pericardium. A wide exposure on each side of the heart is provided.

A HUMAN PATIENT WITH THE PICK SYNDROME

After we had acquired considerable experience in the laboratory in attempting to relieve the Pick syndrome by operation, a patient with the condition presented himself at the Lakeside Hospital. A detailed account of this case is in the literature, and I shall repeat here only the more important features of the case, together with a recent follow-up note:

A boy, aged 13 years (fig. 3), complained of weakness, shortness of breath and pain in the upper part of the abdomen. The symptoms had been present for about one and one-half years; they had been insidious in onset and were becoming more marked. Several transient attacks of jaundice and vague epigastric pain without fever appeared during this period. There was no history of acute rheumatic fever or of chorea. The patient had had frequent attacks of rhinitis and sore throat, and because of the latter the tonsils were removed in 1921.

He was admitted to the medical ward of the hospital, Sept. 4, 1929. While in the hospital, abdominal paracentesis yielded 650 cc. of clear brownish fluid, which did not clot on standing. He was discharged from the hospital, October 5. Although he was able to walk about the house, he had no desire to play with other boys. A mild infection of the upper respiratory tract developed. Dyspnea became more marked. A troublesome cough developed and he was unable to lie recumbent in bed. He was readmitted to the hospital, ten days after his discharge.

The patient had orthopnea. A nonproductive cough was present. Cyanosis of the cheeks, ears, lips and fingernails was conspicuous. The veins of the neck and of the arms and hands were distended. Dilatation of the retinal veins was present. The patient was weak, and he was kept in bed. Edema of the scrotum was present, but elsewhere there was no subcutaneous edema. While he was in the recumbent posture spasms of coughing developed, and he had to be propped up on pillows and a back rest to sleep. The temperature was normal. Pulsus paradoxus was present. The pulse rate varied from 100 to 110 and the respiratory rate from 28 to 40. The systolic blood pressure was from 90 to 100 and the diastolic blood pressure from 70 to 80.

Fluid was never demonstrated in the chest by clinical examination. At times scattered, coarse râles were heard. There was slight impairment of tactile fremitus below the angle of the scapula on each side, but the percussion note was unchanged. There was no precordial activity. The left border of the heart, as determined by percussion, was 10 cm. to the left of the midsternal line. There was no detectable change in the position of the heart with change in the position of the chest.

The abdomen was markedly distended with fluid. The liver was greatly enlarged, firm and slightly tender to pressure; the edge was at the level of the umbilicus. The spleen was large and firm.

The operation of pericardiectomy was carried out, Nov. 21, 1929. A curved incision was made over the precordium, and the third, fourth, fifth and sixth costal cartilages and part of the sternum were removed. The pericardium was adherent to the sternum but it could be separated easily by blunt dissection. The pleural sinus on the left was dissected from the pericardium by sharp dissection. During this procedure the pulse was irregular and the cyanosis seemed to be a little more marked. The pericardium looked like a thick pad of scar. It was incised over the left ventricle away from the anatomic position of the coronary vessels, and the incision was carried deeper and deeper through several millimeters of scar down to the cardiac muscle. This incision was made about 6 cm. long. After the myocardium was observed, a line of cleavage was looked for, and fortunately one existed. The line of cleavage was found by the blunt end of the scalpel. The scar was grasped in a clamp, and the tip of the index finger was inserted between the scar and the heart. The amount of pressure that could be applied in doing this was one of the most valuable lessons that our experimental work had given us. In those areas where the pressure necessary to separate the heart was too great, sharp dissection was used; otherwise the myocardium could have been torn. We had many failures in the laboratory because of entering the myocardium, and the only place for the surgeon to learn "the feel," so to speak, is in the laboratory.

The pericardial cavity was completely obliterated. Dissection was carried out over the left ventricle first, then over the right ventricle and over the auricles. The pulse was irregular because of extrasystoles during this dissection. These critical moments were then followed in a most dramatic way by the heart's dilating to fill with blood. After the heart was freed, it actually rose out of its cramped quarters to take its load of blood. Its contractions were strong and regular. Cyanosis began to disappear. A plaque of scar was then dissected from the anterior coronary vessels by sharp dissection. The surface of the heart seemed to be everywhere free from scar tissue. The pleural sinus on the right side was then dissected from the pericardium, and excision of the pericardium was carried out.

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Our experiments showed the advisability of making the resection of the pericardium as complete as possible. It is of especial importance to free the venae cavae and the right auricle. Exposure of these structures well around to the right could not be obtained in this operation. Although the venae cavae could be felt, we did not dare to excise the scar blindly close to these structures, and the pericardium was excised just as far back as we could see it. The inadequacy of the exposure led to the development of a new incision, which provides exposure on each side of the heart (fig. 4). The flap of soft parts was then placed in its bed and sutured. A small drain was placed in the wound to prevent cardiac tamponade.

120 systolic, and from 60 to 75 mm. diastolic. There is no cyanosis. The venous pressure is 98 mm. of physiologic solution of sodium chloride (fig. 5). The liver and spleen are not palpable. The response to an exercise test consisting of running up and down six flights of stairs was normal: the pulse rate went to 108 per minute and returned to the normal rate in ten minutes, and the systolic blood pressure rose to 130 and was normal in six minutes.

This case therefore represents a form of cardiac decompensation that can be cured by operation. In 1929, Churchill compiled thirty-seven cases in which scar tissue was dissected

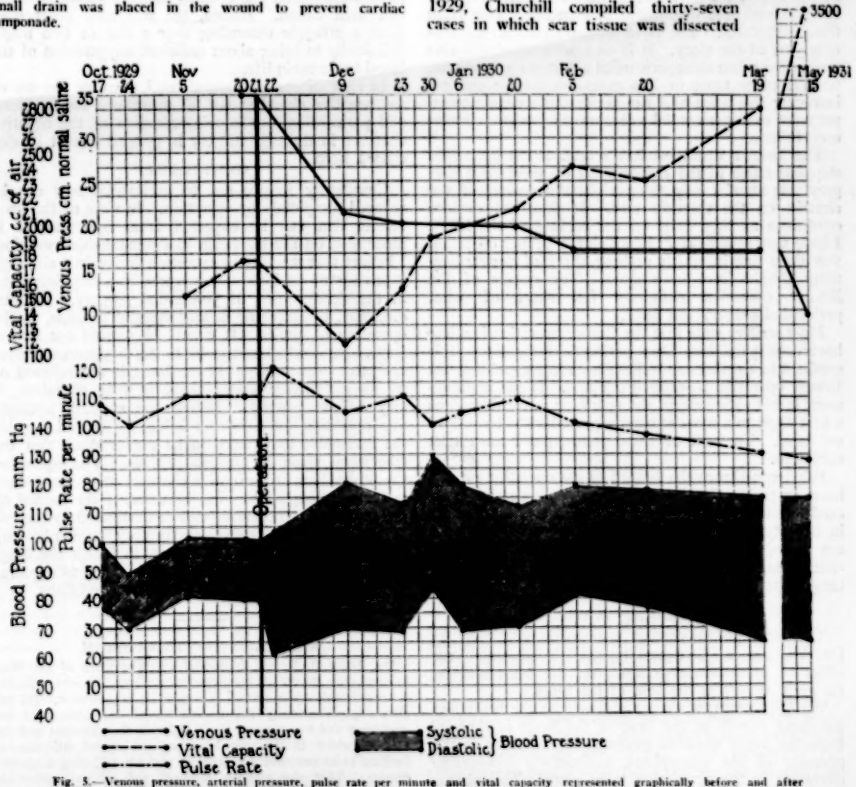

Fig. 5.—Venous pressure, arterial pressure, pulse rate per minute and vital capacity represented graphically before and after pericardiectomy. The shaded area represents the pulse pressure.

At the end of the operation, the cyanosis was noticeably less than before. The jugular veins were less distended. The blood pressure rose to 110 systolic and 70 diastolic. The patient was allowed out of bed on the fourteenth day. Ascites disappeared; 4 Kg. of fluid was lost by diuresis. Râles, cough and orthopnea disappeared. The patient moved about the ward without dyspnea, and his activities frequently had to be restrained by the nurses. The vital capacity became normal; the pulse pressure doubled, and the venous pressure fell. The patient was discharged from the hospital, December 30.

May 15, 1931, the patient had grown 8 cm. and had gained 15 pounds (6 Kg.) in the last year. He leads an active life. His activities are not restricted. There is no abnormal shortness of breath following exercise. The pulse rate is from 84 to 88 a minute; the blood pressure varies from 110 to

from the heart. The result was excellent in 59.4 per cent of the cases in which this operation was carried out, and "frequently there was almost complete relief from symptoms." I should like to point out that these results, striking as they are, can be improved. In the light of our experimental work, many of these operations were incompletely carried out. In some, only separation of scar from the surface of the heart was done; in many the heart was dissected free, but the scar was only partially resected.

THE OPERATION OF CHOICE

As previously stated, a sharp line of distinction has been drawn between those cases for which the Brauer

operation is indicated and those cases for which the Delorme operation is indicated. This line of distinction, I believe, has been drawn altogether too sharply. Intrapericardial or extrapericardial adhesions in themselves may be of little or no importance in bringing about circulatory failure. The important factor seems to be the fibrosis of the pericardium. The fibrosis of the pericardium may be either localized over the ventricles and venae cavae or generalized over the surface of the heart; the pericardium may be adherent to the thoracic wall and diaphragm or completely free from these structures. The term adhesive pericarditis tells only part of the story. It is an inadequate descriptive term, even when extrapericardial adhesions are present, because other more or less extensive fibrotic changes involving the heart and the pericardium must accompany the extrapericardial adhesions to produce circulatory failure.

The Brauer operation has served as an important stepping stone in the development of pericardial surgery. It attacks only the peripheral terminus of the cicatrix on the thoracic wall. It does not explore conditions as they exist on the surface of the heart. I have seen several cases in which the Brauer operation was done but in which nothing short of pericardiectomy should have been done. The results of the Brauer operation definitely fall short of what pericardial surgery can offer.

Most writers state that the Brauer operation is a less hazardous procedure than pericardiectomy since it is confined to the thoracic wall. They recommend that the Brauer operation be carried out first. If the improvement is not satisfactory, the operation is considered as a first stage to a more extensive procedure to be carried out later. To both of these statements I must take exception.

What constitutes the hazard of an operation on the heart or pericardium? The hazard is due to pneumocardiac tamponade. Its deleterious effects are present in each type of operation and, if the operation does not afford sufficient improvement to an embarrassed circulation, recovery from the effects of pneumocardiac tamponade may not take place.

PNEUMOCARDIAC TAMPONADE

The term pneumocardiac tamponade was used by Dr. William V. Cox and myself[9] to designate the effect of atmospheric pressure on the heart and on the great vessels at the base of the heart.

We found that, when the pressure on the heart and the great vessels at the base of the heart is changed from the usual negative pressure of the chest to the pressure of the atmosphere, a definitely measurable alteration in the circulation takes place. This alteration in the normal dog consists of (1) a slight, transient fall in arterial blood pressure, measuring 20 to 30 mm. of mercury, (2) a sustained rise of venous pressure measuring about 6 cm. of water, and (3) a fall in the cardiac output per minute, varying from 15 to 40 per cent.

It was concluded from these experiments that, while the patient with a good circulatory reserve could tolerate this bump to the circulation, the patient with a restricted circulatory reserve might be unable to tolerate it. We advocated that the patient should possess a certain circulatory reserve; otherwise an operation on the heart or pericardium should not be attempted. I know of two patients on whom the Brauer operation was carried out recently. These operations were done under procaine anesthesia; the pleural cavity was not opened and there was no loss of blood. In each of these cases the heart was unable to recover from the effect of pneumocardiac tamponade.

Experimentally, when the circulation had been impaired by the application of pressure in the pericardial cavity, the recovery of the circulation took place slowly after the opening in the pericardial cavity had been closed. Indeed, the weakened heart even after a struggle extending over a day or two might fail finally to bring about sufficient oxygenation of the blood to maintain life.

In view of these observations, I advocate the use of the negative chamber for all operations on the heart and pericardium. The reintroduction of the negative chamber in thoracic surgery in general cannot be discussed here.

CONCLUSIONS

Circulatory failure due to pericardial scar can be relieved completely by operation. In view of the good results that can be expected from operation, it is incumbent on the physician to diagnose this condition. I believe that the Brauer operation is obsolete, although it has served an important purpose as a stepping stone in the development of pericardial surgery. Pericardiectomy, complete as is anatomically possible, is the operation of choice. It should be carried out in one stage, because the heart yields to the surgeon one major operative opportunity. If the heart is not relieved of all its mechanical impedimenta at that operation, it may fail to recover. Before the surgeon attempts this operation on a human being, he should acquire the invaluable experience in its performance that the laboratory alone is able to provide. The operation should be done in a negative chamber to prevent pneumocardiac tamponade. Furthermore, if the hazard of pneumocardiac tamponade can be eliminated by the use of the negative chamber, exploratory pericardiotomy can be carried out in those cases in which the diagnosis is obscure, with the same justification as exploratory laparotomy in obscure abdominal conditions.

Lakeside Hospital.

9. Beck, C. S., and Cox, W. V.: The Effect of Pericardiostomy on the Mechanics of the Circulation, Arch. Surg. 21:1023 (Dec.) 1930.

ABSTRACT OF DISCUSSION

DR. JOHN B. FLICK, Philadelphia: The work of Dr. Beck in producing the "Pick syndrome" experimentally and relieving it subsequently by operation is a splendid achievement. He has shown experimentally the mechanism of development of the syndrome and has thrown much light on the disasters and the failures which in the past have perhaps caused clinicians to hesitate to recommend operation in patients suffering from this disease. That the average internist and surgeon alike are unacquainted with the pathologic physiology underlying the "Pick syndrome" and its relief by pericardiectomy is evident. It is true that the diagnosis is difficult and that the number of persons with this disease is not large, yet I am sure that many diagnosed cases go without the benefit of surgery because it is not generally known that something can be done. Dr. Beck's work on pneumocardiac tamponade is interesting. One can readily see how the Brauer operation, being incomplete when the heart is encased in fibrous tissue, might result disastrously. The relief, being only partial in such cases, might not offset the burdens imposed by the operative procedure. His experiments on the effect of atmospheric pressure on the heart revive the question of the advisability of the negative chamber for operations on the intrathoracic viscera. A fall of cardiac output of from 15 to 40 per cent when the pericardium is opened to the air is something to be taken into consideration, especially in patients with an enfeebled circulation. Is it due to the effect

of atmospheric pressure alone? The use of a negative chamber should settle this question.

DR. WALLACE M. YATER, Washington, D. C.: In regard to that pathologic enigma known as Pick's disease, surgical therapeusis is directed to the relief of mechanical hindrance to cardiac activity. In many cases the myocardium itself is in fairly good condition and release from the handicap should allow a surprising degree of recovery of cardiac function. The work of Dr. Beck and his associates has thrown much light on the nature of Pick's disease. Pick himself believed that the ascites, which is so conspicuous in many cases, was due largely to pathologic changes in the liver. Others maintained that it was due to the peritonitis and perihepatitis that were part of a polyserositis. Osler and others felt that both serositis and passive congestion were factors. Dr. Beck has shown in his animal work that a perihepatitis usually follows a chemical irritation of the pericardium and that ascites is a consequence. This fact demonstrates that the pericardium and Glisson's capsule are in close relationship anatomically and that what affects one may affect the other. Dr. Beck's operative success with the human subject shows in addition that passive congestion also plays a rôle, because the ascites promptly disappears after pericardiectomy. The question of diagnosis always arises when one speaks of adherent pericardium causing cardiac embarrassment. As in all rare conditions, one must have the possibility in mind. Often the signs and symptoms of the textbook are absent. This possibility should come to mind in all cases of cardiac disease in which the usual etiologic factors are absent, whether ascites is a prominent feature or not. One should suspect adhesive pericarditis also in cases of rheumatic endocarditis in which the heart is unduly large and in which response to rest and digitalis is slight. The one pathognomonic sign of great importance is then looked for; namely, the absence of shift of position of the heart with change of position of the patient from one side to the other. Increase in venous pressure is another important sign, but it is not specific. Surgical therapy should not be decided on lightly. The surgeon should be thoroughly conversant with the operative technic and the dangers. The operation should be performed as soon as the diagnosis is certain and after a two weeks' preparatory regimen. This should include rest in bed, digitalization, and elimination of passive congestion by fluid restriction and diuretics. The surgeon and the internist must work together throughout the preoperative and postoperative periods. Dr. Beck's work is a contribution to scientific medicine and an inspiration to the cooperation of surgeons and internists in the treatment of heart disease.

DR. ROBERT L. PAYNE, Norfolk, Va.: I want to bring out two points, illustrated by two patients that I have operated on, which I think will throw some light on the problem. The first patient was a woman. The diagnosis was definite and the indications for operation were clear. In view of the universally accepted idea that the operation should be a graded operation, I decided to do the Brauer operation first. The patient left the table with a drop in venous pressure of 4 mm. of mercury; her pulse was 90 and her general condition was excellent. I knew that she had intrapericardial adhesions but thought with her condition so satisfactory, the best thing to do was to let her pick up, let her venous pressure fall, let her venous inflow change, and do the intrapericardial operation ten days or two weeks later. That afternoon her pulse rate suddenly rose to 140, dropped to 40, and stayed that way for about five minutes. She complained of great oppression, as though something were pressing on her thorax. That night at 11 o'clock I saw her and she went through the same sort of spell for about five minutes. At 4 o'clock the next morning she went through a similar attack and died. That immediately points the finger of suspicion to the fact that I did not recognize the importance of maintaining negative pressure on this heart. Nevertheless there have been many cases reported in the literature in which the Brauer operation alone has been done, in which no provision whatever to take care of the negative pressure was provided for, and recovery took place. The heart hung by two dense bands, one from each side, and had one of those bands been released I believe it would have provided a sufficient additional reserve through increased diastole to combat the obstacle of positive pressure. In all in which I have operated or seen post mortem there have been dense adhesions to the chest wall and diaphragm as well as the intrapericardial fixation. A recent patient, aged 42, with the complete clinical picture of an adhesive pericarditis, had a restricted respiration, lateral expansion and no up and down movements of the chest. A fluoroscopic examination showed marked diminution of the excursion of the auricles and ventricles. He had a definite retraction in the eighth intercostal space almost back to the posterior axillary line. Broadbent's sign was present. He had an increased venous pressure of 28 mm. of mercury and was bedridden with edema of the limbs and ascites and marked dyspnea on all exertion. I decided because of my experience with the first case that I would reverse the procedure and do a phreniconeurectomy and follow that with the Brauer and the Delorme operation. To my surprise, when I did a phreniconeurectomy he was immediately and immensely relieved. He had not been able for months to lie on his left side, and following the operation he went downstairs and lay on his left side and went to sleep. I saw him a week before I came here, and he had walked to my office from a town ten miles distant.

DR. CLAUDE S. BECK, Cleveland: There is little to add. Dr. Payne's cases are interesting, especially the last one that he told about. I might point out that in this case the heart was not subjected to the hazard of exposing it to air. If one reviews the cases in which the Brauer operation has been performed, one will come to the conclusion that, while a certain amount of relief has been afforded to a very high percentage of patients, the percentage who actually get back to work and earn a livelihood is not as high as it is in those who submit to surgical operations.

ADENOMA OF THE ISLANDS OF LANGERHANS WITH HYPOGLYCEMIA

SUCCESSFUL OPERATIVE REMOVAL *

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ST. LOUIS
W. B. GNAGI, JR., M.D.
MONROE, WIS.
AND
EVARTS A. GRAHAM, M.D.
ST. LOUIS

Hypoglycemia from an apparent hyperinsulinemia is being reported with increasing frequency. It has its counterpart in the lowered blood sugar seen after an overdose of insulin.

The symptoms are as a rule quite clear cut and in the more severe cases rather dramatic. Among the first to be noted is that of hunger. This is soon followed by sweating, nervousness and tachycardia. Later, muscular twitchings develop along with disorientation and finally convulsions and coma. The extent of the symptoms is usually directly dependent on the level of the sugar in the blood, just as the symptoms are apparently caused by a lowered sugar supply in the tissues. Anything that will sufficiently deplete the body of sugar will cause these symptoms to appear, while the administration of dextrose will cause them to disappear quickly. In 1924, Harris [1] devised the term "hyperinsulinemia" when he reported several cases of this condition. The origin of what seemed to be an increase in the amount of insulin secreted was not determined by him. This report was followed by others. Jonas [2] in 1925 added a case. Wilder, Allan, Power and

* From the Department of Surgery, Washington University School of Medicine, and the Barnes Hospital.

1. Harris, Seale: Hyperinsulinism and Dysinsulinism, J. A. M. A. 83:729 (Sept. 6) 1924.
2. Jonas, Leon: M. Clin. North America 8:949, 1925.

Robertson[3] demonstrated that such a condition could result from a carcinoma of the islands of Langerhans. Thalhimer and Murphey[4] reported a similar case. A benign adenoma arising from the islands of Langerhans and producing hypoglycemia was found at autopsy by McClenahan and Norris.[5] Such a lesion producing symptoms was removed at operation by Howland, Campbell, Maltby and Robinson,[6] with a relief of the

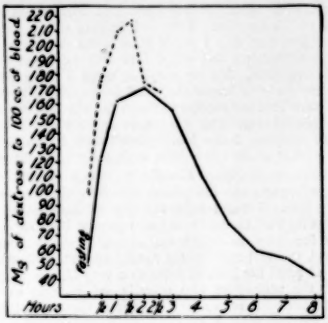

Fig. 1.—Sugar tolerance before (solid line) and sixteen days after (broken line) removal of adenoma.

hypoglycemia. Cushing[7] describes a similar lesion removed at his clinic. Another such adenoma was recently removed at Barnes Hospital by Carr, Parker, Groves, Fisher and Larimore.[8] In this case up to the present time the patient's symptoms have been completely relieved.

Besides these instances, in which definite organic lesions have been found in the pancreas, others have been reported in which exploration gave negative results. Among such reports are those of Allan,[9] the Finneys,[10] and Holman.[11] If no lesion was found, a partial pancreatic resection was attempted. In each of these cases the improvement noted from such a procedure was either transient or partial.

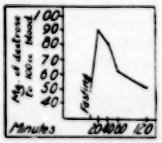

Fig. 2.—Blood sugar determinations following injection of epinephrine.

Since insulin-like bodies are manufactured in many cells other than those of the islands of Langerhans, it is possible that other tissues may enter into the production of this type of hypoglycemia, which is neoplastic in origin. One such case has only recently been seen by Anderson,[12] a tumor of the suprarenal gland. This produced a fatal hypoglycemia with a clinical picture resembling that seen in some of the pancreas cases.

Recently a patient with hypoglycemic seizures due to an adenoma of the islands of Langerhans came under our observation. The tumor was removed with a complete relief from symptoms.

REPORT OF CASE

E. D. a white man, aged 44, a farmer, had been in good health until October, 1929. One morning at this time he noticed that while doing his chores about the farm before breakfast he became mentally confused. He described the symptoms as similar to those of alcoholic intoxication. After eating breakfast he felt normal again. His next attack was early in the morning about one week later, when he noticed the same sort of feeling. Attacks began to be more frequent and a little more severe. Early in December, 1929, he had his first very severe attack, at which time he became unconscious and had to be carried into the house. He was given food and in a few moments was feeling normal again. His memory as to what took place during this seizure was considerably confused. He consulted his family physician, who could find nothing abnormal on physical examination. During the next two months the patient was examined at two different clinics,

Fig. 3.—Pancreatic acini in the midst of two different types of tumor tissue and in several places directly continuous with it.

where the diagnosis of a possible brain tumor was made. He was given phenobarbital, with no improvement. He now began having attacks before rising in the morning, during which, according to his wife, he became much confused, spoke at random and at times fell from his bed. She also noticed twitching movements, especially about the face. There were never any generalized convulsions. At another clinic it was found that he had a pathologic condition of the gallbladder, and the gallbladder was removed along with the appendix. There was no amelioration of the symptoms. It was at this time that his wife noticed that, if she fed him several times at night, his attacks could be prevented. He also began carrying candy around in his pockets during the day and noticed that frequent eating of it prevented the seizures. He was referred to us in January, 1931, for study.

General physical examination gave entirely negative results with the exception of a slightly lowered blood pressure; i. e., 128 systolic and 74 diastolic. There were no positive neurologic observations. The disks were normal, as were the visual fields. Roentgenograms of the skull were indeterminate. The basal metabolism rate was plus 3 per cent. The urine was normal; red blood cells 5,230,000, and white blood cells 6,600. The differential count was normal. Hemoglobin was 90 per cent. The Wassermann and Kahn reactions of the blood were both negative. Phenolsulphonphthalein excretion was 80 per cent in two hours. The blood amylase determination

3. Wilder, R. M.; Allan, F. N.; Power, M. H., and Robertson, E. H.: Carcinoma of the Islands of the Pancreas, J. A. M. A. **89**: 348 (July 30) 1927.
4. Thalhimer, William; and Murphey, F. D.: Carcinoma of the Islands of the Pancreas, J. A. M. A. **91**: 89 (July 14) 1928.
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6. Howland, Goldwin; Campbell, W. R.; Maltby, E. J., and Robinson, W. L.: Dysinsulinism, J. A. M. A. **93**: 674 (Aug. 31) 1929.
7. Cushing, Harvey: Lancet **2**: 119 (July 19) 1930.
8. Carr, A. D.; Parker, Robert; Groves, E. W.; Fisher, A. O., and Larimore, J. L.: Hyperinsulinism from B-Cell Adenoma of the Pancreas, J. A. M. A. **96**: 1363 (April 25) 1931.
9. Allan, F. N.: Hyperinsulinism, Arch. Int. Med. **44**: 65 (July) 1929.
10. Finney, J. M. T., and Finney, J. M. T., Jr.: Ann. Surg. **88**: 584 (Sept.) 1928.
11. Holman, Emil, quoted by Allan, F. N.; Boeck, W. C., and Judd, E. S.: Surgical Treatment of Hyperinsulinism, J. A. M. A. **94**: 1116 (April 12) 1930.
12. Anderson, H. B.: Am. J. M. Sc. **180**: 71 (July) 1930.

by Elman's method was 7.5 units (5 units normal). Blood nonprotein nitrogen was 27 mg. per hundred cubic centimeters.

The patient was given his regular evening meal. This was followed by 200 cc. of milk at 7 p.m. and 200 cc. of sweetened grape juice at 9 p.m. He was not given any more food that evening. At 6:15 a.m. he was found to be awake. His face was expressionless, his pupils somewhat dilated and, though

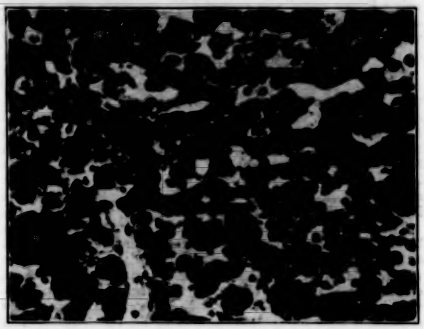

Fig. 4.—Beginning stage of tumor. Island type of tissue. The cords of cells are separated only by wide capillary vessels. There is little connective tissue.

he answered when spoken to, his answers were incoherent. There was a generalized coarse tremor and the respirations were mildly Biot in character. A specimen of blood was taken for a sugar determination. The patient was then given 120 gm. of dextrose by mouth (estimated weight 150 pounds or 68 Kg.). Ten minutes after receiving the dextrose he was again alert and did not remember any of the preceding events. No more food was given, and blood specimens were taken at hourly intervals (fig. 1). At the end of seven hours he again became slightly confused; he began to perspire; it was noted that the

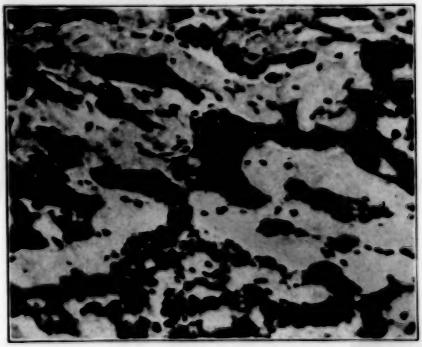

Fig. 5.—Advanced stage of tumor tissue with broad strands of hyalinized connective tissue separating the epithelial cords.

reflexes were slightly hyperactive. He soon presented the same clinical picture that he had presented earlier in the morning, and further food was given, with immediate relief. The foregoing description is that of a fairly typical attack and was observed on several occasions.

The reaction to epinephrine was found to be a definite one. The patient was temporarily relieved of his confused state and showed at the same time a rise in blood sugar (fig. 2).

The reaction to solution of pituitary was delayed and irregular, though there was a slight rise in blood sugar.

February 4, a laparotomy was performed. The pancreas was exposed through the gastrocolic omentum, and at about the junction of the body and tail on the anterior surface a small tumor was seen, about 0.5 cm. in diameter. It showed through the posterior peritoneum as a dark spot suggestive of a small hemorrhagic area. It felt firm. When the peritoneum was incised it was found that the tumor could not be shelled out of the pancreatic tissue, and it was therefore necessary to dissect it out with a small margin of normal pancreatic tissue around it. Before this was done, purse-string suture was placed in the substance of the pancreas in order to control hemorrhage. The vessels in the region of the tumor were all enlarged. The edges of the tumor bed were brought together, and the peritoneum was then closed over. A small rubber drain was placed over this and brought out through the left side of the abdomen by means of a stab wound.

Convalescence was somewhat stormy at first. Immediately after the operation a pulmonary infection developed which, however, was not very severe. On the second day after operation there was a fairly rapid edema of the lungs. The patient was placed in an oxygen tent and given atropine. His condition improved rapidly. A pancreatic fistula developed

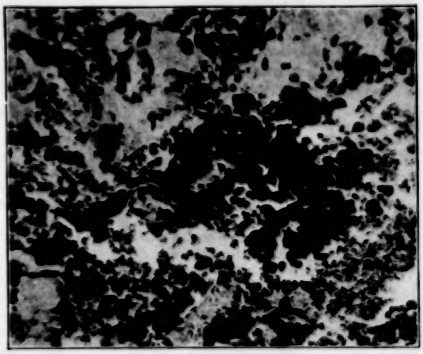

Fig. 6.—Degeneration of tumor cells with hemorrhage.

several days later. This did not cause any skin excoriation and was rapidly closing at the time he left the hospital. Since his operation he has not had any more attacks, although his diet has been one containing no more carbohydrate than that of a normal individual. Fasting for twelve hours has failed to bring on an attack. In fact, the blood sugar at this time was 99 mg. per hundred cubic centimeters. At no time since operation has it been lower than this. A postoperative dextrose tolerance curve, taken just before the patient's discharge from the hospital, is shown in figure 1.

We were fortunate in being able to submit the tumor tissue to Prof. R. R. Bensley of the University of Chicago, who was present at the time as a visiting professor of anatomy in Washington University. Dr. Bensley is recognized as an authority on the cytology of the pancreas. His report follows:

The tissue consisted of several small fragments of pancreatic tumor in formol-Zenker, acetic-Zenker, Zenker stock, Bouin's fluid, and Altmann's fluid. In addition, a small fragment was transferred to me fresh without addition of any fluid whatever.

Inspection of the pieces so obtained revealed the presence of a small ovoid tumor with an extreme long diameter of 11 mm. and cross diameter of 5 mm., nonencapsulated, and attached to a small piece of pancreatic tissue. The examination of the fresh material in Ringer's solution revealed the fact that it was

composed largely of cellular aggregates, the cells of which readily separated from one another to float freely in the Ringer's solution. Each of these cells on examination under the oil immersion lens was found to be packed with minute granules and to contain a large clear nucleus in which the only detail visible in the fresh tissue was a conspicuous nucleolus. In some of the cells large vacuoles were visible in addition and, in many of them, small highly refractive droplets which suggested fat or lipoid.

Fig. 7.—Granular content of the cells, amorphous inclusions and chromophil shreds as seen under oil immersion.

While examination of the fresh cells was in progress, another portion of the fresh material was stained with neutral red in a 1 in 10,000 concentration in physiologic solution of sodium chloride. It should be remarked that, when normal islands of Langerhans are so treated, the minute granules which the cells contain stain rapidly a bright yellowish red color with the neutral red. The cells of the tumor showed, with the neutral red, a curious reaction, which was observed also in the case reported by Carr, Parker, Grove, Fisher and Larimore. In that case the granules in groups of cells stained intensely with neutral red, while other groups of cells, clearly containing granules, failed to stain. Other cells of the same tumor showed scattered granules, staining with neutral red, dispersed among other granules which failed to stain.

I was of the opinion when I examined this first tumor that the failure of the neutral red to stain every cell was due to the mechanical difficulty of penetration of the dye, but the examination of the present tumor, in which by the experience gained in the study of the first it was possible to take precautions to avoid this, indicates that in both tumors there are granules present which stain readily with neutral red and other granules which do not stain with neutral red. In the tumor now under description, scattered cells, not in groups, stained exactly as a normal beta cell of the island of Langerhans stains; that is to say, the cells were packed with granules which stained brightly with neutral red. These cells did not occur in groups, as in the Carr-Parker-Grove-Fisher-Larimore case, but were individual. Many cells contained scattered neutral red stained granules mingled with granules of about equal size which refused to stain, but the majority of the cells contained granules which stained only faintly with neutral red.

Two other observations were noted in all the cells of the tumor: a few granules, about the size of a zymogen granule, in the pancreatic acinus, more highly refractive than the regular granules and staining brightly with neutral red; a few cells contained rather indefinitely outlined amorphous bodies which stained rather faintly with neutral red. As the preparation became old, the cells behaved like island cells under similar circumstances; vacuoles formed in the cytoplasm, and the granules disappeared.

The material fixed in the various fixing fluids previously mentioned was embedded in paraffin, cut into sections 4 mm. in thickness, and stained in the usual way by Bensley's neutral gentian, Bowie's ethyl violet-Biebricher-Scharlach neutral stain, Mallory's connective tissue stain, Heidenhain's azo modification of Mallory's connective tissue stain, hematoxylin-eosin, and hematoxylin followed by eosin azure.

The tumor was slightly irregular in outline and, as already mentioned, was not encapsulated. At portions of the surface it was separated by broad strands of collagenous connective tissue from the neighboring pancreatic lobules, but at other points it was actually in contact with pancreatic tissue, and at one point in the tumor (fig. 3) the pancreatic acinus tissue was not only in contact with the tumor tissue but was actually in epithelial continuity with it.

The substance of the tumor itself was imperfectly divided into lobular masses by heavy strands of collagenous connective tissue. In these bands, portions of pancreatic ducts were seen and, in addition, masses which presented the appearance found in lobules of a pancreas whose ducts have been ligated. In the latter masses, regenerated acinus cells, such as those which have been described by Grauer [13] in his account of regeneration in the pancreas of the rabbit, were to be seen. There were also present in this tissue small and large groups of normal island cells, also probably of recent origin.

The acinus cells seen in these complexes had evidently arisen by differentiation from duct epithelium, since they presented all grades of advance in the regenerative processes, as follows: (1) individual acinus cells surrounded on all sides by duct epithelium; (2) groups of two or three acinus cells, and (3) well individualized small acini. Ducts were in many places continuous with the epithelial masses of the tumor itself. The tumor tissue presented different aspects in its different parts, and these different aspects I conceive to be the different stages in the progress of this growth.

One lobe separated from the others by strands of connective tissue presented the appearance of an enormous, overgrown island of Langerhans, except, as appeared later, for the fact that the cells which composed it were not normal island cells of either category but abnormal tumor cells of island reference. This portion of the tumor (fig. 4) consisted of anastomosing cords of epithelial cells separated by wide sinusoidal capillaries, the endothelium of which was almost in contact with the epithelial groups, a minimum of reticular connective tissue being interposed.

Fig. 8.—Lobule of tumor with duct elements at edge. Note the beginning formation of hyaline connective tissue around the sinusoids.

In the adjacent portion of the tumor (fig. 5) the proliferation of the epithelial elements had exceeded the rate of growth of the vascular components, and in this portion of the tumor an extraordinarily large mass of epithelium was traversed only by a normal number of capillary blood vessels, and these showed a tendency to become separated from the epithelial elements by an increase in the layer of connective tissue outside of the endothelial tube. In some of these cellular masses

13. Grauer, T. P.: Am. J. Anat. 38:233-253 (Nov.) 1926.

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there was a breakdown of cells, forming spaces containing scattered necrotic epithelial cells and much blood, the blood vessels having evidently ruptured into the space provided by the death and dissolution of the epithelial cells.

In the third section of the tumor an appearance which approached that in the Carr-Parker-Grove-Fisher-Larimore case was attained. Groups of epithelial cells were separated from one another by wide strands of hyalinized connective tissue containing blood vessels. Degenerative processes in this tumor were not nearly so manifest as in the tumor removed by Dr. Fisher, but in places the cells had completely (fig. 6) broken down and the place formerly occupied by them was now filled with blood, a few scattered epithelial cells and, in some instances, isolated groups of tumor cells attached to the walls.

The cells of which this tumor was composed, when fixed in acetic-Zenker and stained with aniline-acid-fuchsin Mallory [14] presented the general aspect of the cells of the islands of Langerhans. The cytoplasm was crowded with minute granules, and the cells presented a large oval nucleus of the vesicular type, with a large conspicuous nucleolus.

Sections of material fixed in chrome sublimate and in formol-Zenker, stained with Bowie's stain or Bensley's neutral gentian, revealed the fact that only a small proportion of the cells of the tumor had the characteristics of normal beta cells.

Sections of material fixed in acetic-Zenker and stained with Bowie's stain showed faintly red stained granules similar in size to beta granules but having a different staining reaction. They did not react to stains as alpha cells do.

Examination of the material fixed in chrome sublimate or formol-Zenker, stained with neutral gentian or with Bowie's stain, showed that many cells in this tumor contain beta granules associated with granules of another sort. This observation recalls the observation made by Robinson [6] that in his tumor some cells contained both alpha and beta granules.

The examination of several tumors of the pancreas collected by Dr. Margaret Smith of this university, on which she will report separately, indicates that the condition found in this tumor is a not uncommon circumstance in such cases. In some of these cases, as in the case reported by Howland and his associates, the content of normal beta granules is much larger than in the tumor under consideration. In all the cells of this tumor, sections of material fixed in Altmann's fluid showed a content of scattered, minute granules blackened with osmic acid.

In sections of acetic-Zenker material the tumor cells showed a content which is not present in normal islet cells and is not present in the islets of portions of this pancreas attached to the same section. These were of two sorts:

First, irregular masses and shreds of material scattered through the cytoplasm but located chiefly in the end of the cell toward the blood vessel, which resembles the chromophil substance found in the acinus cell of the pancreas. This material stained with hematoxylin but was particularly well brought out by following a faint staining with hematoxylin by a prolonged staining in eosin-azure, in which the cells stain intensely blue (fig. 7).

Second, roughly spherical, amorphous masses, which likewise stained with eosin-azure, but much less intensely. The chromophil bodies were often in direct contact with the nuclear membrane, and, in the material fixed in formol-Zenker, changes in the nucleus were to be observed which indicated the probable origin of the extranuclear chromophil material from the nuclear chromatin.

The nuclei in the formol-Zenker material showed frequently a sickle-like thickening of the nuclear membrane at one pole, and, attached to this thickening of the membrane, irregular shreds of chromophil material extended out into the cytoplasm.

After finding this chromophil substance in the cells of this tumor, I looked for it again in the cells of the Carr-Parker-Grove-Fisher-Larimore tumor and in the cells of the tumor described by Robinson, a section of which I had at my disposal through the courtesy of Dr. Robinson and Dr. Arthur Ham. The search proved positive in both cases, and this circumstance indicates that in all three instances the cells of the new growth possess qualities which are not present in normal island cells of either order, but suggest a tendency for these cells to express acinus cell qualities as well.

14. Warren: Pathology of Diabetes Mellitus, p. 30.

In sections of the tumor fixed in Bouin's fluid and treated by Masson's process for the detection of argentaffine granules, the granules of the cells remained negative.

The pancreatic tissue attached to the tumor consisted of a number of lobules separated by connective tissue through which a large duct passed. Some of the lobules showed a moderate degree of interstitial fibrosis, and one lobule near the lumen showed the regressive changes that usually accompany any obstruction of a duct; that is, it consisted of dilated remains of the duct system separated by connective tissue (fig. 8).

In the islands of the pancreas itself there was a quite pronounced reduction in the usual content of beta granules, indicating a certain grade of depression of the normal beta cell function. It should be remarked that the new islands, developed in the periphery of the tumor from the duct, did not exhibit this phenomenon.

The cytologic study of this and of the preceding tumor, and of the one reported by Robinson, indicates that in this case the tumor is not one composed of normal island cells but, on the contrary, one composed of cells which, while having a considerable resemblance to island cells, yet differ from them in important details. These differences consist of the production of a granular secretion antecedent, which differs in important details from the normal content of the island cells, and in the presence in these cells of a chromophil substance, which is unusual to island cells and is found in the normal pancreas only in the acinus cells.

The normal pancreas, as is well known, contains a very considerable excess of island tissue and yet ordinarily does not yield to the general circulation an excess of insulin. The fact that a tumor of such meager proportions could produce the symptoms of insulin shock and yet not be responsive as the normal islands are to the mechanisms that ordinarily regulate the export of insulin from the pancreas, is possibly to be found in the fact that the lesion under discussion is an abnormal cell type which, to be sure, resembles island cells but is not identical with them.

Some doubt exists in my mind as to whether this tumor should be regarded as adenoma or carcinoma. The failure to form a definite capsule and the inclusion of normal pancreatic elements in the tumor itself seem to favor the latter diagnosis.[15]

COMMENT

The mechanism of the production of the apparent hyperinsulinemia is obscure. While many of the cells were abnormal morphologically and some of the secretory antecedents were unusual in type, ordinary beta granules were plentiful. Furthermore, the clinical picture and the reaction of the patient to dextrose when administered were of the type encountered in the reaction of the body to an overdosage of insulin. Therefore while it is possible that in such a case as this dysinsulinemia is present, there is no proof that the product is not a normal secretory one. When one considers the excessive amount of insulin-producing tissue that exists in the body, the remarkable feature is that hyperinsulinemia is not more common.

In several cases in which the cause of the phenomenon was not apparent, partial resection of the pancreas was done. The results on the whole have been unsatisfactory. The work of Allen on dogs has shown that in this animal roughly about nine tenths of the pancreas must be removed before there is a constant production of glycosuria. If the same relationship holds in man, such a procedure to be efficient would be technically very difficult.

If such a tumor as the one that we have described should occur in the head of the pancreas or in the substance of the body, it would be extremely difficult to discover at operation. For this reason we feel that such a picture of hypoglycemia as we have described

15. Six months after the operation there was no evidence of any recurrence, and the patient stated that he was entirely well.

should not be considered idiopathic in origin until careful section of the pancreas is made at necropsy. At postmortem examination such a growth is probably often missed unless special care is taken. Shields Warren [16] collected four such cases and Margaret Smith at this institution has recently seen several.

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CHRONIC MYELOGENOUS LEUKEMIA

VALUE OF IRRADIATION AND ITS EFFECT ON THE DURATION OF LIFE

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Any discussion of the value of irradiation in myelogenous leukemia must be based on a knowledge of the natural course of this disease. The duration of life in untreated cases is not well known; statistics are few, and the following factors make difficult the determination of this point: The disease is comparatively rare, and the literature contains only a few large series of cases; since the development of radiation therapy, untreated cases are rarely encountered; early writers did not clearly distinguish between lymphatic and myelogenous leukemia; in addition, the gradual development of the disease makes it difficult to determine the exact time of onset.

The statement is usually made that the course of the disease is from two to four years. In 1924, Minot, Buckman and Isaacs [1] published a study of 166 cases, including a group of 130 in which the total duration of the disease was known. This group was composed of seventy-eight patients who had been treated by irradiation and fifty-two who had received no irradiation whatever. The average duration of life after onset in the group of untreated patients was found to be 3.04 years; in the treated group, only 0.46 year longer, or 3.50 years. From this, they concluded that irradiation had little effect in prolonging the life of these patients.

A similar study of a comparable group of cases is presented in this paper and an attempt is made to determine the value of irradiation and its effect on the duration of life in chronic myelogenous leukemia. The results are graphically shown on charts similar to those used by Minot and, where comparison offers anything of value, the results of Minot and others are plotted on the same charts with those of the Memorial Hospital.

Myelogenous leukemia is a relatively rare disease. It makes up only 0.4 per cent of the cases seen at Memorial Hospital. Since 1917, eighty-two patients with this disease have been examined and treated at this institution, an average of about six a year. Of these eighty-two patients, seven are still living and seventy-five are dead. All these patients were treated by radiation, the character and results of which will be discussed later.

AGE INCIDENCE OF MYELOGENOUS LEUKEMIA

Chart 1 shows the age incidence of the disease in eighty cases studied at the Memorial Hospital. It shows a similar curve constructed from one given by Ward [2] for 247 British cases and a third curve representing 166 cases studied by Minot and his co-workers. These curves agree closely throughout all decades up to 80 years of age. In more than half the cases (55 per cent) the disease begins between the ages of 30 and 50 years. The decade of greatest incidence is that between 35 and 45 years. It will be seen that the disease is relatively and absolutely rare below the age of 10 years. The incidence of the disease increases slowly from 10 to 20 years of age and more rapidly in the ten-year period between 20 and 30 years. The oldest patient in the Memorial Hospital series was 66 years of age and the youngest was 14 years of age, at the time of onset. The average age at onset was 38.7 years. In order to make a comparison of the percentage of cases of this disease occurring in a given decade with the percentage of population constituted by that age group, a curve has been constructed on chart 1 which shows the percentage composition of the population by decades according to the United States census of 1920. The ratio between the percentage of cases of myelogenous leukemia per decade and the percentage of living persons of similar age rises steadily until it reaches a value of 2 at the age of 30. In all succeeding decades this figure is practically a constant. For instance, the incidence of the disease in the decade 30-39 years is about 32 per cent, and the chart reveals that this age group makes up 15 per cent of the population. In like manner, one may note that in the decade 40-49 years the incidence of the disease is about 22 per cent, while that age group forms slightly over 10 per cent of the population. From this, one may conclude that the likelihood that myelogenous leukemia will develop does not increase with the years after the 30 year mark.

SEX INCIDENCE

Minot assembled the cases of Cabot,[3] Vogel,[4] Ward,[2] Giffen [5] and Lazarus [6] and, adding to them his own cases to a total of 605, found that 60 per cent were in males and 40 per cent were in females. Of our own eighty-two cases, 68 per cent were in males and 32 per cent in females. Ward analyzed the proportion of sexes at various age periods and showed that, in the age groups below 25 years, this preponderance of the male did not prevail, and that in the younger group there was a slight predominance of females. Our series included so few patients below the age of 25 that no conclusions were justified.

DURATION OF SYMPTOMS BEFORE DIAGNOSIS

The usual early symptoms of myelogenous leukemia are easy fatigue, slight loss of weight or strength, and moderate gastro-intestinal disturbances. On account of the mild nature of these symptoms the onset is insidious and it is difficult to determine accurately when the disease was first established. It is probable that any determination of the time of onset, based on the development of definite symptoms which might reasonably be assigned to the disease, would fall short by several months, at least, of the true date of onset, because of the latent period, during which the symptoms were so slight as to escape notice. The disease varies so widely in its speed of development that one must

16. Warren, Shields: Am. J. Path. **2**: 335, 1926.

1. Minot, G. R.; Buckman, T. E., and Isaacs, Raphael: Chronic Myelogenous Leukemia, J. A. M. A. **82**: 1489 (May 10) 1924.

2. Ward, G.: Brit. J. Child. Dis. **14**: 10 (Jan.-March) 1917.

3. Cabot, R. C., in Osler and McCrae: Modern Medicine, Philadelphia, Lea & Febiger **4**: 659, 1915.

4. Vogel, K. M., in Nelson: Loose-Leaf Medicine, New York, T. Nelson & Sons **4**: 66, 1920.

5. Giffen, H. Z.: Boston M. & S. J. **177**: 686 (Nov. 15) 1917; M. Rec. **94**: 1020 (Dec. 14) 1918; Minnesota Med. **4**: 132 (March) 1921.

6. Lazarus, A., in Nothnagel's Practice, Philadelphia, W. B. Saunders Company, 1905, p. 647.

be cautious in any conclusions drawn from a small number of cases.

The interval between the onset of symptoms and diagnosis of the disease varied widely. Four extremely chronic cases averaged twelve years' duration of symptoms before diagnosis. The shortest period was one month, and this short interval was found in fifteen cases. These were in patients in whom the disease developed more rapidly than usual, although none of these cases were acute leukemia. In the forty-eight remaining cases in which this information was obtainable, the average duration of symptoms before diagnosis was a little more than a year (1.1 years). The average for the whole group of sixty-three cases, exclusive of the four extremely chronic cases, was nine months (0.75 year). Minot found that in sixty-eight of his cases which occurred during the years 1917-1923, the interval between symptoms and diagnosis averaged 1.24 years. The most important factor leading to the diagnosis was the presence of the enlarged spleen. In seventy-seven of the eighty-two cases, splenomegaly was present at the time of diagnosis, indicating that the disease is rarely recognized before this enlargement has taken place. In twenty-seven of these patients the splenic enlargement was the first evidence of abnormality and was the reason advanced for consulting a physician.

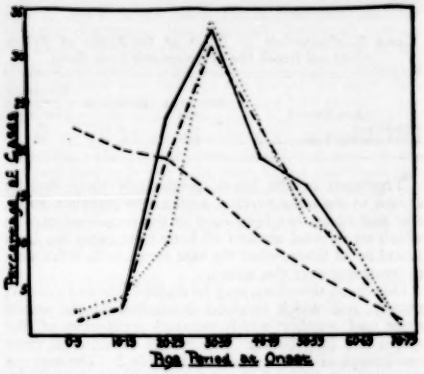

Chart 1.—Age incidence in eighty cases of chronic myelogenous leukemia; age distribution in percentage of population of the United States in 1920: solid line, Memorial Hospital; line of dots and dashes, Minot; dotted lines, Ward; line of dashes, percentage composition of population by decades.

DURATION OF LIFE

The duration of life of seventy-five treated patients varied from six months to more than sixteen years from the time of onset to the time of death. Among them were four patients presenting the extremely chronic form of myelogeneous leukemia. These patients lived 16.5, 16, 12.5 and 11 years, respectively, after the onset of symptoms presumably due to the presence of myelogenous leukemia. They came under treatment so late in the course of their disease (from 0.33 to 1.4 years previous to their death) that their long life can in no way be regarded as the result of the treatment they received. In the interest of greater accuracy, these exceptional cases were excluded from the calculations; their inclusion would have increased the average duration of life by about eight months and introduced an error of nearly 20 per cent.

The remaining seventy-one cases are shown in table 1, where they may be compared with Minot's fifty-two cases, in which no radiation treatment was used. As the table shows, the average duration of life of the nonirradiated patients was 0.32 year less than that of the irradiated patients, the average course of the disease being 3.36 years for the irradiated patients and 3.04 years for the untreated groups. The age at which the disease develops has apparently little relation to the duration of life. The figures do suggest that the average duration is slightly shorter in the older age groups but, as is pointed out in Minot's paper, the expectancy of life is normally shorter in older than in younger persons, and this factor may account for the shorter duration of life after 50 years of age.

TABLE 1.—*Comparison of Duration of Life in Irradiated and Nonirradiated Patients*

Treated by Radiation					Not Treated by Radiation (Minot, Buckman and Isaacs)			
Average Duration of Life, Years	Number of Cases			Age by Decades	Number of Cases			Average Duration of Life, Years
	Females	Males	Total		Total	Males	Females	
....	0	0	0	1-10	0	0	0	....
4.19	0	2	2	10-20	2	0	2	2.50
5.50	4	14	18	20-30	9	8	1	3.72
3.61	9	16	25	30-40	21	12	9	2.66
3.38	3	9	12	40-50	13	7	6	3.73
3.07	3	6	9	50-60	5	2	3	2.01
2.88	2	3	5	60-70	2	1	1	2.70
3.36	21	50	71	Totals	52	30	22	3.04

Chart 2 presents these results in graphic form, illustrating the duration of the disease in years for the Memorial Hospital group of irradiated patients and for both of Minot's groups of patients. The curves, while not identical, are similar, and such variations as do exist are caused by a difference of only a few cases in each category. The chart reveals that slightly more than one third of the patients die within two years of the onset of the disease, more than one half within three years, and two thirds within four years.

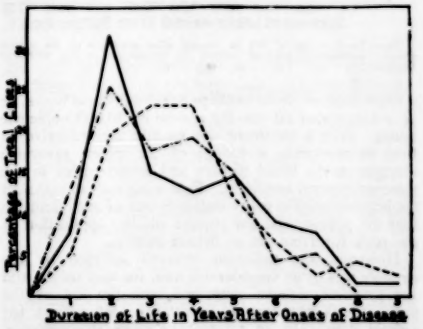

Chart 2.—Comparison of the duration of life in patients with chronic myelogenous leukemia who were given radiation treatment and those who were not: Memorial Hospital (solid line), seventy-one irradiated patients; Minot's (broken line), seventy-eight irradiated patients; Minot's (line of dots and dashes), fifty-two nonirradiated patients.

The duration of life after the discovery of the splenomegaly was found to average 2.66 years. The longest duration was six years and the shortest was five

months. Chart 3 shows these results in a curve whose general shape resembles the curve that shows the duration of life after onset. Inspection of this chart shows that the greatest incidence of death is during the period ranging from ten to twenty months after the discovery of the splenic enlargement.

There was no significant difference between males and females in their duration of life, the figures being: males, 3.4 years; females, 3.27 years.

All these patients were treated by radiation. During the years from 1918 to 1923 the usual method of treatment consisted of irradiation of the long bones by x-rays and irradiation of the spleen by the radium emanation pack. Since 1923, treatment in most cases has been limited to irradiation of the spleen. Until 1926, this was accomplished by applying the radium emanation pack over the spleen anteriorly and anterolaterally. The pack at that time consisted of a flat, oblong metal container 11.2 by 7.3 cm., holding glass tubes containing radon, enclosed within silver capsules. The metal filtration was the equivalent of 2 mm. of brass. The pack was applied at a distance of 6 cm. for

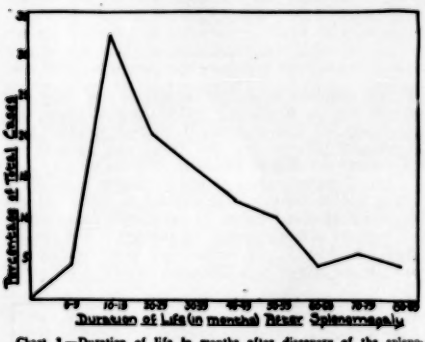

Chart 3.—Duration of life in months after discovery of the splenomegaly; seventy-one patients treated by irradiation at the Memorial Hospital.

a single dose of from 6,000 to 8,000 millicurie hours, or at a distance of 10 cm. for a dose of 10,000 millicurie hours. Such a treatment was usually very effective, at first, in producing shrinkage of the spleen, favorable changes in the blood picture and improvement in the patients' general condition. Following such a treatment the improvement in many instances was of such duration that the patients did not require another application of the pack for from six to fifteen months.

However, the radiation sickness suffered by the patients was often considerable and, for that reason and for practical reasons connected with the use of the pack, it was necessary to hospitalize each patient for several days. In an attempt to make the radiation reaction less severe and to render it possible to treat some of these patients in the outpatient department, while still preserving the principle of concentration of the treatment within a relatively short period, the following technic of roentgen treatment was devised in 1926:

The anterior and lateral contours of the spleen are mapped out as accurately as possible. To this area only (the surrounding areas being shielded by lead rubber) a fraction of approximately one sixth of a skin erythema dose is applied once daily for from four to six days, depending on the individual case. The following factors were employed: voltage, from 135 to 140 kilovolts; distance, 15 cm.; filtration, 5 mm. of aluminum; current, 5 milliamperes. The time of exposure required for an erythema dose on the skin with these factors is from twenty-five to thirty minutes. A five minute treatment is given at each sitting. The results from such treatment seem to be equal to those formerly obtained by the use of the radium emanation pack.

Table 2.—*Comparison of Effect of Irradiation of Spleen Alone and Irradiation of Spleen and Long Bones*

Area Treated	Number of Cases	Duration of Life	Percentage of Efficiency Since Onset
Spleen alone	44	3.30 yr.	77
Spleen and long bones	27	3.35 yr.	71

Treatment of the bones, particularly those that lie closest to the body surface, such as the sternum, spine, ribs and tibias, has been used in the occasional case in which an unusual amount of bone tenderness has been found or, at times, when the case seems to be refractory to treatment over the spleen.

Our cases, therefore, may be divided into two groups; namely, one which received irradiation of the spleen alone and another which received irradiation of the spleen and long bones. The results obtained in these two groups of cases are shown in table 2. The average duration of life of forty-four patients treated by irradiation of the spleen alone was 3.30 years; twenty-seven patients who received treatment directed to the spleen and long bones averaged 3.35 years. The difference of duration is insignificant. The slightly longer period of efficient life (77 per cent as compared with 71 per cent) is also within the limits of statistical error, but one gains the impression from observing these patients clinically that those who receive only irradiation of the spleen do not exhibit the frequency or the degree of anemia seen in those who receive, in addition, irradiation of the long bones.

COMPARISON OF IRRADIATION IN FIRST HALF OF DISEASE WITH IRRADIATION DURING LAST HALF OF DISEASE

To discover whether the beginning of treatment early in the course of the disease had a more favorable effect on the duration of life, the cases were divided into two groups, depending on whether treatment was begun in the first half or in the last half of the course of the disease. Fifty-seven patients were treated in the first half of this period; fourteen were treated only after more than one half of the time intervening between onset and death had already elapsed. The average duration of life in those treated in the first half was 3.08 years, and in those treated in the latter half of the disease 5.08 years. Apparently those treated late in the disease lived two years longer than those who were treated early. This does not mean that irradiation shortened the lives of the early group. Study of those fourteen patients who were irradiated late in the course of their disease reveals that their disease was not diagnosed until an average of 3.66 years after the onset of symptoms. These patients, therefore, had already had their disease more than three times as long as the average patient does, before their symptoms were severe enough to lead them to an examination and to a diagnosis. Moreover, the average duration of life of these

twelve patients after diagnosis was only 1.33 years, which is about fifteen months (1.27 years) less than the average of the whole group. This can mean only that these patients comprised a small group in which the disease was pursuing a much slower course at first than it does in the average case, so that, by the time the disease was diagnosed, two thirds of the course was run and the patients were definitely failing.

Minot found similar results when he compared two such groups from his cases, and he concluded that this apparent discrepancy was "probably indicative only of the natural chronicity of these cases, the health of the patients not having been impaired enough to permit a diagnosis until they had had the disease for more than two and a half and up to seven and a half years." It is plainly evident that irradiation has little effect in increasing the average duration of life in myelogenous leukemia. The figures show that 7 per cent of the patients lived only one year, that 32 per cent lived two years, that 15 per cent lived three years, that 27 per cent lived from four to five years, while 20 per cent of the patients survived longer than five years after the onset of symptoms.

TABLE 3.—*Comparison of Effect of Early or Late Irradiation Treatment*

When Begun	Number of Cases	Duration of Life	Time Between Onset and Diagnosis	Duration of Life After Treatment
First half	57	2.08 yr.	1.0 yr.	2.2 yr.
Second half	14	5.08 yr.	3.66 yr.	1.33 yr.

PERIOD OF DECLINE

After a varying number of cycles of splenomegaly and treatment therefor, each followed by a remission in the disease, with remarkable improvement in the blood picture, size of the spleen and general condition of the patient, a time arrives at last when, despite all efforts, the condition of the patient becomes steadily worse. This period of decline is the closing chapter in the disease. It is usually fairly swift, but it may last nearly a year. In our series, more than one half of the patients died within four months and 85 per cent within six months after the beginning of this final phase.

If, in spite of irradiation, these patients' lives are prolonged only for a few months, the question naturally arises: Why irradiate them at all? The answer is found in the remarkable effect which radiation exerts on the condition of the patient. Spontaneous remissions are rare in chronic myelogenous leukemia. In Minot's fifty-two untreated cases, they occurred in only four patients (7.7 per cent). The course of the disease is usually a steady downward progress, especially in the latter half of the disease, when the patients may be reduced to invalidism, many of them bedridden and miserably awaiting the end. Under properly administered irradiation, these patients obtain remarkable clinical benefit so that at least half of them are restored to a state of health that, so far as they themselves are aware, approaches normal. The effect, while temporary, may last from a few months to a year. Repetition of the treatment will usually be followed by marked improvement as before, but after a varied number of these cycles the irradiation becomes less effective. When at last, in spite of irradiation, the patient does not improve and sometime later dies, one is left with a strong conviction that the patient has been restored several times to that level of physical well being and efficiency which permitted him to be moderately active at a light occupation and able to enjoy life. This would seem to justify the opinion that irradiation does definitely extend the duration of efficient life of the patient.

Chart 4 has been constructed to compare the duration of efficiency in the Memorial Hospital irradiated patients with that in Minot's irradiated and non-irradiated patients. This chart is similar to one in which Minot compared his irradiated and nonirradiated patients. It is designed to illustrate the duration of efficient life in relation to the time of irradiation or the time the diagnosis was established. The ordinates represent in percentage values the efficient period after irradiation (or after diagnosis, in those who were not irradiated). The abscissas represent that percentage of the total remaining life after onset of the disease, which elapsed before irradiation was begun (or before the diagnosis was established in those who were not irradiated). Each dot represents one case. The continuous line averages

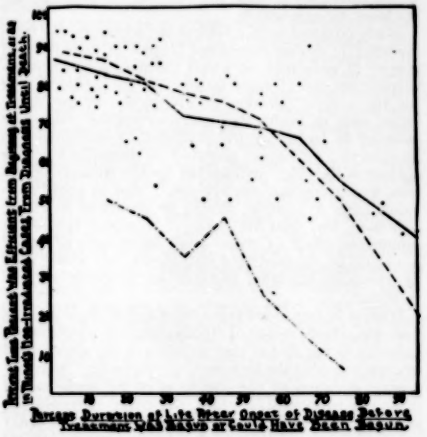

Chart 4.—Comparison of the efficiency after irradiation of seventy-one Memorial Hospital patients (solid line), of seventy-eight of Minot's patients (broken line) and, after the diagnosis (a time when radiation treatment could have been begun), of fifty-two of Minot's patients who did not receive irradiation (line of dots and dashes).

the groups of irradiated patients; the broken line averages Minot's irradiated groups; the line of dots and dashes averages the nonirradiated groups. The chart shows that on the average the irradiated patients were efficient for a period 30 per cent longer than were the nonirradiated patients. It will be seen that the percentage duration of efficiency is greater, the earlier treatment is started. This is what one would expect since, in the earlier phases of the disease, the remissions obtained are much greater and last much longer.

The close similarity of the curves representing the duration of efficiency in the Memorial Hospital patients and in Minot's irradiated group should be noted. From the chart, it will be seen that, when radiation is applied early in the disease, the efficient life of the patient will constitute from 70 to 80 per cent of the time remaining between the institution of treatment and death. When treatment is deferred until the latter half of the course of the disease, the percentage of efficient life will be correspondingly lower. Nevertheless, it will be about

30 per cent higher than for the untreated patient in the same category. It naturally follows that the later in the course of the disease the treatment is instituted, the shorter will be the period during which the patient is efficient.

The average elapsed time from the beginning of symptoms to the commencement of irradiation was 0.75 year, varying from one month to fourteen years, as compared with 1.4 years for Minot's series of irradiated patients and a variation from a few months to 6.25 years. The average of actual duration of efficient life after beginning irradiation was 2.13 years, varying from eight months to 5.66 years. Minot's cases averaged 1.6 years, with variation between less than a month and 4.5 years. The discrepancy between the two sets of figures is in favor of the Memorial Hospital patients and amounts to six months. The probable reason for the longer period of efficiency in our patients is that diagnosis was made and treatment begun about eight months earlier than the average of Minot's series. When allowance is made for this, the difference probably loses its significance.

Many patients with myelogenous leukemia die from intercurrent disease contracted because of their lowered powers of resistance, of which the anemia and exhaustion are but two of many factors. If the patient is kept for the natural duration of his disease in the vastly better state of health that characterizes the remissions obtained by treatment, the likelihood of succumbing to intercurrent infections probably is diminished. This opinion is the chief justification for the clinical impression, which one can scarcely avoid, that in many individual cases irradiation, though temporary in its effect, is nothing less than life saving. However, before the cumulative effect of these small increments of added life could be demonstrated statistically, one would need the carefully tabulated histories of hundreds of such patients.

It must be concluded from the study of these patients that the chief value of irradiation in myelogenous leukemia is the 30 per cent increase in the duration of efficient life after the beginning of treatment. Since the average duration of the disease after the beginning of treatment is about 2.62 years, the effect of irradiation is to purchase for the patient nearly a year (0.8 year) of efficiency and well being that he otherwise could not hope to enjoy, a reprieve cheaply purchased with a few hours of irradiation.

SUMMARY

1. Eighty-two cases of myelogenous leukemia are analyzed and compared with a series of 130 cases reported by Minot, Buckman and Isaacs. Of these eighty-two patients, seven are still living and seventy-five are dead.

2. The decade of greatest incidence is that between 35 and 45 years. When correction is made for the percentage composition of the population at each decade, it is revealed that the incidence of the disease increases from infancy to 30 years of age and from that time onward remains practically constant. The disease is rare below 25 years.

3. Of eighty-two patients with chronic myelogenous leukemia, 68 per cent were males and 32 per cent were females.

4. The duration of symptoms before the diagnosis of the disease varied widely. In fifteen cases the elapsed time was less than one month. In four extremely chronic cases, it averaged twelve years. In the remaining forty-eight cases in which this could be established, it averaged a little more than a year (1.1 years). The average for the whole group of sixty-three cases in which this was recorded was 0.75 year. Splenomegaly was present in seventy-seven of the eighty-two patients at the time of diagnosis, indicating that the disease is rarely recognized before this enlargement has developed.

5. The average duration of life after the onset of disease was 3.36 years and varied from more than sixteen years to as little as six months. This figure was only four months longer than the average length of life in Minot's group of fifty-two nonirradiated patients, indicating that irradiation actually adds little to the duration of life in this disease. Slightly more than one third of the patients die within two years, more than one half within three years, and two thirds within four years after the onset. The average duration of life after the discovery of the splenomegaly was 2.66 years; the longest was six years and the shortest was six months. There was no significant difference between the duration of life in males and in females.

6. The average duration of life after the beginning of treatment was 2.62 years. One group of these patients received radiation directed to the spleen and long bones; the other group was treated by irradiation of the spleen alone. There was no significant difference in the duration of life in these groups. Irradiation early in the course of the disease had no effect on the duration of life.

7. Repeated cycles of irradiation produce remarkable improvement in the condition of patients with myelogenous leukemia. The effect, while temporary, lasts from a few months to a year. Most of the patients are restored to a degree of physical efficiency that permits activity at light work. Repetition of the treatment is necessary to preserve this efficiency. In the terminal stage of the disease, despite all effort, the patient's condition becomes steadily worse. The decline is usually fairly swift, and 85 per cent of the patients are dead within six months after the beginning of this final phase.

8. The average duration of efficient life after the diagnosis of the disease was 30 per cent greater in our irradiated patients than in Minot's nonirradiated patients. The percentage of efficient life is much greater when treatment is given in the first half of the disease.

9. The actual duration of efficient life after beginning irradiation averaged 2.13 years, varying from eight months to 5.66 years. The radiation treatment causes an average increase of about ten months in the duration of efficient life—a period of efficiency and usefulness that the patient otherwise could not hope to enjoy.

Scurvy and Beriberi.—In 1804 the regular issue of a ration of lemon juice was made compulsory in the British navy and thereafter scurvy was a comparatively rare disease among British sailors, whereas a few years earlier thousands of cases were reported every year. . . . In the Japanese navy the disease beriberi was for a long time exceedingly prevalent. The number of cases sufficiently severe to be officially reported ranged annually from 25 to 40 per cent of the entire navy force during the years 1878 to 1882. At about this time Takaki (1885) became convinced that the diet had some relation to the disease and succeeded in having the ration modified in several respects, the most important change being the substitution of barley for a considerable part of the polished rice which had previously been the chief article of food. Immediately following this change in the ration, beriberi practically disappeared from the Japanese navy.—Sherman and Smith: The Vitamins, New York, Chemical Catalog Company, Inc., 1931.

RESULTS OF TREATMENT OF THROMBO-ANGIITIS OBLITERANS BY FOREIGN PROTEIN *

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Nonspecific foreign protein in treatment of cases of thrombo-angiitis obliterans was used by Goodman and Gottesman [1] in 1923. At the Mayo Clinic this method was adopted by Brown in 1924 and has been employed intensively since 1926. Early results and the rationale of this method of treatment were considered by Brown [2] in 1926, by Allen and Brown [3] in 1928, and by Brown, Allen and Mahorner [4] in 1928. In 1928, Allen and Smithwick [5] reported detailed results in thirteen cases.

Appreciation of the nature of the disease, its organic changes, pathogenesis, clinical course and various clinical types is necessary in evaluating any method of treatment applied to a large group of cases. Nearly all observers agree that thrombo-angiitis obliterans is by nature a chronic, relapsing, inflammatory disease. Arterial obstruction tends to occur locally and periodically, and its effects are, to a certain extent, counterbalanced by the slow development of collateral circulation.

Episodes marked by destruction of tissue and severe pain are caused by extensive or rapidly developing arterial occlusion only or, as too frequently happens, with the addition of minor trauma and localized infection with bacteria or fungi. Lesser degrees of arterial insufficiency are manifested by "rest pain" without trophic lesions and still lesser degrees by simple claudication. By rest pain is meant pain that is not induced by exercise; it is not necessarily continuous.

Although amputation of a limb is to be dreaded, it becomes necessary if there is extensive gangrene, and even when gangrene is limited, if the pain is excessive and is not relieved by other treatment. It is often better to sacrifice a limb than a patient's nervous and psychic equilibrium. Also, amputation may be justified in severe cases if a patient's economic status will not permit of prolonged rest, hospitalization, and the inactivity necessary for healing.

Medical treatment, then, has as its primary objects relief of pain and healing of open lesions as rapidly as possible. If these objects are attained, amputation may be avoided and the patient may be restored to a useful place in society. Increase of the flow of blood in the extremities, even if temporary, is of primary importance. Theoretically, the remaining intact arterioles to an affected extremity are in a condition of partial spasm, or at least of normal tonus, and can be dilated so that they will permit increased flow of blood. In the consideration of the rationale of treatment by foreign protein, it has been shown definitely that vasodilatation, with increased flow of blood through an extremity, occurs during the febrile reaction. The demonstration has been both by measurement of surface temperature and by measurement of elimination of heat with the calorimeter. The second important effect of the foreign protein reaction is relief of pain. In some cases this seems proportional to and coincidental with the vasodilatation. However, relief of pain occurs in other conditions than vascular disease, and frequently even in thrombo-angiitis obliterans the optimal period is the twenty-four hours or longer following cessation of the fever, when vasodilatation is no longer present.

Many different agents have been used as foreign proteins for the production of the desired reaction, which is an increase in systemic temperature of from 2 to 4 degrees Fahrenheit. Preparations for intramuscular administration have been disappointing, in that it is difficult to produce a sufficient febrile reaction with them, and often there is considerable residual soreness at the site of injection; even abscess has formed with certain agents. Sulphur-in-oil, as discussed by Waller,[6] produces satisfactory fever reactions when given intramuscularly, but local reactions are occasionally severe. Bacterial vaccines given intravenously, particularly those of the typhoid group, have been the most popular. The most satisfactory preparations so far encountered are the ordinary TAB (*Bacillus typhosus, B. paratyphosus* A and B) and the typhoid H [7] antigen, and these have been used in this series of cases. These vaccines have about the same therapeutic effect. The former is a little more sure of producing a reaction; the latter tends to cause less chill and malaise for the amount of fever produced. The phase of chill in a reaction to foreign protein is a by-product that one would like to avoid. It is unpleasant for the patient, causes some vasoconstriction, and is slightly conducive to thrombosis. The initial dose of these vaccines is from 15 million to 30 million organisms. The number of injections depends on the response in relief of pain and in healing. Injections have been given as often as every other day, and as many as eighteen to a course. Sometimes they have been given once a week for a prolonged period. The dose is increased as is necessary to keep up the reactions, for patients vary considerably in their tolerance. Usually the dose has to be increased by 25 million organisms each time. As much as 500 million has been given in a single dose toward the end of a course. If prolonged treatment is necessary, it is usually well to give a period of rest of a month or so after twelve injections.

Foreign protein has been given to approximately 300 patients with thrombo-angiitis obliterans at the Mayo Clinic. In 150 cases, at least three injections were given as a definite therapeutic procedure. In the others, only one or two injections were given, usually as a test for vasomotor reaction. In approximately 2 per cent, satisfactory febrile response could not be produced with intravenous injection of vaccine. There were no fatalities. Untoward reactions occurred in only three cases. In one case, thrombosis of the femoral artery occurred during the period of chill, without, however, gangrene of the foot or leg. A second patient had an attack of acute enteritis, which lasted four days. The third patient had recurrence of an old iritis. In general,

* From the Division of Medicine, the Mayo Clinic.

* Read before the Section on Pharmacology and Therapeutics at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 12, 1931.

1. Goodman, C., and Gottesman, J.: Pain and its Treatment in Thrombo-Angiitis Obliterans, New York M. J. **117**: 774-775 (June 20) 1923.

2. Brown, G. E.: The Treatment of Peripheral Vascular Disturbances of the Extremities, J. A. M. A. **87**: 379-383 (Aug. 7) 1926.

3. Allen, E. V., and Brown, G. E.: Thrombo-Angiitis Obliterans: A Clinical Study of 200 Cases: II. Treatment and Prognosis, Ann. Int. Med. **1**: 550-557 (Feb.) 1928.

4. Brown, G. E.; Allen, E. V., and Mahorner, H. R.: Thrombo-Angiitis Obliterans, Philadelphia, W. B. Saunders Company, 1928.

5. Allen, A. W., and Smithwick, R. H.: Use of Foreign Protein in Treatment of Peripheral Vascular Disease: Results of Intravenous Injection of Typhoid Vaccine, Tr. Sect. Surg., General & Abd., A. M. A., 1928, pp. 61-78.

6. Waller, L. M.: The Use of Sulphur for the Production of Fever in Peripheral Vascular Disease, Proc. Staff Meet. Mayo Clin. **6**: 159-161 (March 18) 1931.

7. Barker, N. W.: Typhoid "H" Antigen: Further Observations on Nonspecific Foreign Protein Therapy in Peripheral Vascular Disease, Proc. Staff Meet. Mayo Clin. **5**: 267-270 (Sept. 24) 1930. Typhoid H is an experimental product. It is a fraction of typhoid bacteria prepared by emulsification of the organisms in sodium chloride solution and subsequent killing with 0.5 per cent phenol.

patients with thrombo-angiitis obliterans are young or middle-aged men, otherwise quite healthy, who stand even severe foreign protein reactions well. This method of treatment is contraindicated for elderly, asthenic, cachectic, arteriosclerotic or markedly anemic patients and for those with cardiac disease, particularly coronary disease, or with obvious latent or subacute infections.

For purposes of better evaluations of results, the 150 cases are divided into five groups according to the clinical picture at the time the treatment was begun. This division does not take into consideration other important factors, such as the age of the patient, the extent of arterial closure, and the duration of the disease. The composition of the groups is shown in table 1.

The results in group 1 were rather disappointing. It is doubtful whether enough improvement, temporary or lasting, is accomplished, when patients have claudication only, to justify the time spent and the inactivity entailed by a course of injections of foreign protein. Claudication may persist for a long time in otherwise quiescent cases. Intensive treatment is neither satisfactory nor very necessary in this group. Results were most satisfactory in groups 2 and 3. The rapidity with which pain of long standing was relieved and ulcers healed was striking. All four patients in group 2 who obtained slight, if any, relief had ischemic neuritis. The pain

TABLE 1.—*Immediate Results*

	Cases	Per Cent
Group 1, claudication without rest pain or trophic changes:		
Complete relief of claudication	2	12
Partial relief, walking distance increased	7	41
No benefit	8	47
Total	17	
Group 2, rest pain without ulcers or gangrene:		
Complete relief of rest pain	15	54
Almost complete relief; able to resume work	9	32
Slight relief only	3	11
No benefit	1	3
Total	28	
Group 3, simple ulcers and rest pain:		
Complete relief of rest pain; rapid healing of ulcers	26	47
Complete relief of rest pain; slow healing of ulcers	14	26
Partial relief of rest pain; slow healing of ulcers	7	13
Slight or no relief of pain; progression of lesion and amputation	8	14
Total	55	
Group 4, rest pain and gangrene limited to digits:		
Complete relief of rest pain and healing	21	46
Partial relief of rest pain and subsequent healing	9	19
Temporary or partial relief of rest pain only; amputation within one year	5	11
No benefit; immediate amputation	11	24
Total	46	
Group 5, massive gangrene extending proximally to the digits:		
Slow improvement and healing	1	25
No benefit; immediate amputation	3	75
Total	4	
Summary of all groups:		
Marked improvement	73	49
Slight to moderate or slow improvement	41	27
No improvement	9	6
Progression, amputation	27	18
Total	150	100

that accompanies this type of disorder is extremely difficult to control by any method. Before treatment was begun, some of the patients in group 4 were judged clinically to be in hopeless condition with regard to saving of the affected limbs. In a few of these, results were strikingly good, pain was relieved, and healing took place. In this group a long period of quiet is frequently required and in general a policy of "hands off" with regard to the local lesion.

Other simple therapeutic measures were used in practically all cases in conjunction with the administration of foreign protein. These were postural exercises, radiant heat and bland local applications to, or dessication of, open lesions. If there were no open lesions, contrast baths were used. The effectiveness of these measures, however, was judged to be of minor importance compared with the treatment by fever.

TABLE 2.—*Follow-up Data*

	1		2		3		4		Total	
	Cases	Per Cent	Cases	Per Cent	Cases	Per Cent	Cases	Per Cent	Cases	Per Cent
No recurrence	6	66	6	22	8	17	8	27	28	24
Recurrence; relief and healing with further treatment by foreign protein	..	..	3	11	11	23	1	3	15	14
Recurrence; relief and healing without treatment	1	11	..	..	2	4	1	3	4	3
Sympathetic ganglionectomy	..	..	2	7	9	19	8	27	19	18
Recurrence; no response to treatment	..	..	2	7	..	..	2	7	4	3
Recurrence; severe pain; gangrene; amputation	1	11	4	14	4	8	2	7	11	10
No data	1	11	10	37	13	29	8	27	32	28
Total	9	..	27	..	47	..	30	..	113	..

In table 2, follow-up data are given to show the outcome in the 113 cases of the first four groups in which definite benefit resulted from the first course of foreign protein. These cases have been followed for from one to five years, many of them at intervals of six months.

If thrombo-angiitis obliterans is an infectious disease, one might hope for some nonspecific immunity to be developed by a course of injections of foreign protein. In a few cases, immediate cessation of superficial phlebitis of long standing has given hope that such immunity may be developed. Patients who have gone from one to five years without recurrence or evidence of further vascular occlusion are encouraging to see; yet the number who have had recurrence makes it debatable whether foreign protein ever tends to prevent the formation of new lesions.

Some of the patients in this series who have remained free from recurrence have taken occasional short courses of foreign protein, even though they had no evidence of exacerbation of the lesions. It is an open question whether one should always wait until rest pain recurs before starting a new course.

It appears from this study that treatment by foreign protein is chiefly valuable in thrombo-angiitis obliterans to carry a patient through one of the critical periods of exacerbation, provided gangrene has not already become too extensive. Once he has been carried through such a period, other measures should be substituted. These include education regarding the disease; protection of the extremities from mechanical, thermal and chemical injury; special hygiene, particularly of the feet; limitation of activity; abstinence from tobacco; postural exercises; contrast baths, and sympathetic ganglionectomy in selected cases. In certain cases in which ulcers or limited gangrene are present, and in which healing is well established following treatment by foreign protein, sympathetic ganglionectomy will markedly accelerate the process of healing.

COMMENT

Treatment by foreign protein is rational for thrombo-angiitis obliterans. It tends to relieve pain and give increased blood supply to the extremities, thus accelerating the healing of open lesions. It has relatively little

effect in cases in which there is claudication only or in cases in which there is extensive gangrene. The best results are secured in cases in which there is rest pain, with or without ulcers or limited gangrene.

ABSTRACT OF DISCUSSION

DR. HYMAN I. GOLDSTEIN, Camden, N. J.: I recall a number of years ago in the Philadelphia General Hospital two rather interesting cases of this condition in one of which a man had four or five amputations. One leg was gone, as were also some toes on the remaining foot and some fingers on one hand. He received prompt relief from the intravenous injection of minute doses of typhoid vaccine; he actually begged for it. While he was in the hospital, I also had another man who had a number of amputations and who had received perhaps more relief, or rather more permanent relief from the use of 2 per cent solution of sodium citrate given intravenously at intervals of about two weeks, sometimes longer. Recently the use of tissue extracts and particularly the deinsulinized pancreatic extracts, as used in France, and muscle extract, as used in Germany and Odessa, has been tried out in this country. In July, 1929, Charmais and Kisthinios reported some cases of obstruction of the central artery of the retina that practically cleared up under the injection of fairly good sized doses of a pancreatic tissue extract. Whether this substance acted by virtue of some hormone element or acted by some trophic influence or perhaps as an ordinary foreign protein, I don't know; but if it acted in any one of these ways, it is perhaps a preparation that might be tested experimentally in this country.

DR. BENJAMIN JABLONS, New York: I am greatly indebted to the Mayo Clinic for reports like these. It is by such centralized intensive study that they are able to evaluate methods of treatment for comparatively rare pathologic conditions, which many even in large centers are not able to do. Their results indicate that there is some value in foreign protein therapy in this disease. My experience in New York has not been as favorable with this method. Several important points should be emphasized in connection with this disease. One is that the disease is not limited to the extremities. Most investigators in the last few years have come to the conclusion that it is a general disease, affecting a limited or widespread vascular territory in various parts of the body. Therefore, the rationale of foreign protein therapy applicable to peripheral involvement has little or no value in the disease of deep-seated viscera. The problem is still one requiring thorough and intensive investigation as to etiology and proper methods of treatment. This disease is not limited to a certain race, as formerly supposed. It affects various racial groups and is rather widely disseminated throughout this and other countries. In fact, the observations of the past twenty years indicate that the disease is definitely increasing and that there are a great many clinical conditions attributed to other disease categories which belong in that of thrombo-angiitis obliterans. That includes many gastrointestinal, pulmonary and cardiac conditions. In all forms of therapy, one of the important things that must be kept in mind is that the treatment instituted must do no harm. That, unfortunately, is not always the case in thrombo-angiitis obliterans. Many of these new therapeutic measures suggested apparently give relief because they are used in the milder, self-limited groups of the disease, and enthusiasts accept this new treatment as the long sought panacea. After a period of anywhere from one to several years one finds that this treatment is of comparatively little value, while in many cases it may do a great deal of harm by increasing the tendency to thrombosis, which is so commonly present. Many of these patients are thus exposed to a progressive gangrene many years before they would probably develop it spontaneously.

DR. RUSSELL M. WILDER, Chicago: I should like to ask Dr. Barker to make more explicit what these two antigens were, H and TAB.

DR. NELSON W. BARKER, Rochester, Minn.: It was not my purpose to extol this method of treatment as being superior to others, but merely to give immediate and end results. What Dr. Goldstein said about patients begging for treatment with foreign protein has also been true in my experience. Foreign protein reactions are not always pleasant for a patient, but if pain of long standing is relieved (and this often occurs immediately even after the first injection, and frequently after as few as three injections) he is likely to beg for more if the pain recurs. Experience in the Mayo Clinic with the sodium citrate method versus the vaccine has been that the vaccine was much more effective. We have had little experience with tissue extracts, with the exception of insulin, which was tried several years ago in a small series of cases without apparently any satisfactory results. Dr. Goldstein mentioned, however, that the pancreatic extract was deinsulinized. Preparations are certainly desirable which can be used to produce mild reactions in those cases in which there are contraindications to treatment by intravenous vaccine. A number of preparations have been tried in the clinic, and so far one has not been found that we feel is safe and still produces the desired reaction. The possibility of the lesions of thrombo-angiitis obliterans occurring in other parts of the body has also come to our attention. Cases of anginal pain with coronary disease have been reported by Allen and Willius. Dr. Wilder has asked me to explain what is meant by the typhoid H antigen, and also the TAB. The TAB is the ordinary stock vaccine which is used for immunization purposes against typhoid and parathyroid. The typhoid H antigen was developed in an effort to prevent the chill factor and minimize the malaise in a foreign protein reaction. It has been used in approximately sixty cases and results have shown that it does tend to minimize these two factors. It is one of two fractions of dead typhoid bacteria. Its exact composition is not known, but it is thought to be the specific fraction; the O antigen, the other fraction, is considered to be nonspecific, occurring also in many other kinds of dead bacteria.

TUBERCULOSIS CONTROL IN TENNESSEE *

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A detailed discussion of the Tennessee tuberculosis control program and the results accomplished after a three year period of operation would require more space than allotted for this paper. An outline of the program in its early development was reported by one of us [1] in 1928. It is our purpose in this discussion to refer to additional features, which have been developed during the past year and a half, and to suggestive results as indicated in a brief analysis of the records of a reexamined group of clinic patients.

From an analysis of the mortality and morbidity records of the state, it is evident that tuberculosis constitutes a major health problem. During the past decade the mortality rate has declined considerably, but even with this reduction the death rate from tuberculosis in the state is greatly in excess of that for the United States Registration Area. In 1929 the rate for the state was 120.3 per hundred thousand of population, whereas the rate for the registration area was 76. Further analysis reveals the fact that the death rate in the Negro race is nearly three times that for the white population. In 1919 these figures were, respectively, 248.1 and 94.5 per hundred thousand of population.

As an activity of the state government, an organized attempt to control tuberculosis had its beginning in 1927. Neither at that time nor at present do there

* Read before the Section on Preventive and Industrial Medicine and Public Health at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 11, 1931.

1. Bishop, E. L.: The Tennessee Plan for Tuberculosis Control, Illinois M. J. 54: 423 (Dec.) 1928.

exist any state owned or operated hospital facilities for the care of tuberculous patients.

When it is considered that there are approximately 30,000 tuberculous patients in the state, it is readily seen that adequate hospital facilities would necessarily entail an enormous amount of money. Hence the objective in the development of the present program has been to provide the initial stage, which will serve as a basis on which a more balanced program, including one of hospitalization, may be evolved.

The present program, which is essentially one of field activites, has been developed with the following objectives: (1) to define the problem of tuberculosis within the state in as specific terms as possible, in order that the further development of control measures may be specific in its approach based on an analytic study of requirements; (2) to push back the date of diagnosis of cases of tuberculosis to the earliest possible moment, and (3) to carry on educational activities relating to the control of the disease.

THE FIELD CONTROL PROGRAM

The control program, as now carried on, comprehends measures which are joint responsibilities of the practitioners of medicine, health agencies and the public as a whole. Perhaps the most significant factor in connection with such an approach to the problem is the reliance on and utilization of existing local resources, particularly practitioners of medicine. It is not meant to imply that specialists in tuberculosis and a system of hospitals for the treatment of tuberculous patients are not essential in controlling the disease, but a reliance on these alone is believed to be fundamentally and economically unsound. The importance of securing the cooperation of the practicing physicians was realized at the beginning, and before the program was put into operation it was explained in detail before every medical society in the state, with the result that it was endorsed in every instance.

The chief features of the Tennessee program are: (1) the conduct of tuberculosis case finding clinics throughout the state; (2) the rendition of consultant service to rural physicians; (3) the provision of nursing follow-up service, and (4) a comprehensive study of the hospital requirements.

The primary object of the clinics is to uncover cases of tuberculosis not known to physicians and particularly those cases in which the disease is in its incipience and not manifesting significant symptoms. Since private physicians cannot ethically solicit patronage, it obviously becomes the duty of some organization to undertake the responsibility, not only of finding the disease in the earliest possible stage, but also of placing and maintaining under medical care persons suffering from the disease. Thus it is seen that the health department serves two essential functions: (1) to act as a case finding agency and (2) to serve as a connecting link between previously undiagnosed cases and physicians.

Through the follow-up nursing service, physicians are enabled to have such details carried out in the home as are generally necessary in caring for the patient and also in preventing the spread of the disease. This service is rendered only in instances in which it is requested by the family physician, and always under his written orders.

CLINIC CLIENTELE

The clientele of the clinics is chosen essentially from the following groups: (*a*) contacts of known cases of tuberculosis; (*b*) members of a family or household in which a death from tuberculosis has occurred; (*c*) individuals referred by physicians as tuberculous suspects for a definite diagnosis, and (*d*) individuals, whose cases have been diagnosed at previous clinics as positive or suspicious, returning for reexamination.

From this classification it is evident that those attending clinics are drawn from that fraction of the population most heavily exposed to the risk of infection and in which, therefore, the largest case incidence may be expected. In locating the first two groups, full use is made of mortality and morbidity records of the state health department. Particular emphasis is placed on the investigation and examination of the family as a unit rather than on the individual.

One point in connection with the clinics, which from an administrative standpoint is believed to be of paramount importance, is the fact that all observations and diagnoses are made known only to the family physician. Clinic patients are informed that in order to secure information regarding their condition they must report to the physician of their choice, whose name has previously been recorded on the individual history record. This policy is strictly adhered to and has established a relation between the clinicians and practicing physicians exactly similar to that existing between any private consultant and practicing physicians. We believe this policy to be responsible for much of the success of the field control program.

Of the ninety-five counties in the state there are forty-three that have full time health service and, obviously, the control program can be carried on in these counties much more intensively and effectively than in counties that do not have such service. Here the organization of clinics and subsequent follow-up service is a responsibility of the local health unit personnel, the state department furnishing only the services of a clinician. At the present time, the county health departments are giving control of tuberculosis a place commensurate with its importance as a public health problem. Each of the forty-three counties having full time units has at least one chest clinic a month; some have as many as three. Clinics are scheduled in these counties one year in advance, and they are so arranged that the clinics for a particular county are conducted on the same day each month. By so doing, it has been found that organization is greatly facilitated and requires a minimum of the nurses' time. Physicians of a county, and the public, soon become familiar with the regular date and make application for appointments. In counties not having full time health service, the organization and follow up is performed by members of the nursing staff of the state health department. For many and obvious reasons the effectiveness of the program in unorganized counties is far below that in organized counties.

TUBERCULOSIS IN CHILDREN

Childhood tuberculosis must be included in any control program, and especially is this true when families or groups are considered as units for examination. This phase of the work is given a place of due importance in our program, particularly in those counties having full time health departments.

The health officer is responsible for the tuberculin testing of children. This must be performed prior to the date of a clinic, and children are not admitted to a clinic for examination without a record showing the result of the tuberculin tests. In tuberculin testing, preference is given to the following groups of children

in the order named: (*a*) children 14 years of age and under, who are or have been in contact with a person having tuberculosis; (*b*) children 14 years of age and under, who are or have been in contact with a person suspected of having tuberculosis; (*c*) routine testing of school and preschool children.

The Mantoux, or intracutaneous test, is the method employed. Ordinarily, for the initial test 0.01 mg. is used, followed by 1.0 mg., if initial test is negative.

Every child having a positive tuberculin reaction is roentgenographed, regardless of the physical observations or history of contact. It is well known that physical examination reveals but little in childhood tuberculosis, and reliance must be placed on information gained through the tuberculin test, roentgenograms and history.

ROENTGENOGRAPHY

Two portable 30 milliampere x-ray machines are employed in connection with the field clinics. These machines are very compact and can be easily transported over the state in any ordinary automobile. The majority of small towns and villages are supplied with electric current and there are few places in the state, where clinics are conducted, in which it is impossible to use the x-ray machine. Despite the fact that under field conditions we are forced to use flat plates rather than stereoscopic, it has been found that the portable machine is exceptionally satisfactory in field work and has greatly aided the clinicians in arriving at diagnoses.

Roentgenograms are not made of every one attending clinics. Such procedure would be very costly and in many instances would not serve any purpose. The selection of the patient to be roentgenographed is left to the discretion of the clinician. The x-rays are essential in the examination of the following groups of clinic patients: (1) individuals regarded as suspects on physical examination; (2) all children having a positive tuberculin reaction, and (3) patients whose cases have already been diagnosed as positive either at a clinic or by a private practitioner; in these cases roentgenograms are needed to determine the possibility of including pneumothorax, phrenicotomy or thoracoplasty in the treatment.

RESULTS

Excluding the four counties that have cities of over 100,000 population and that have local tuberculosis control programs centering around the county sanatoriums, there are ninety-one counties in the state with an aggregate population of approximately 1,800,000. From November, 1927, through December, 1930, 1,283 clinics were conducted in these counties, an average of 14 clinics per county for the three year period, or 4.7 clinics per county per year.

At these clinics, 20,101 examinations were made of 17,105 individuals. Of the total number of examinations, 2,996 were reexaminations. The average attendance per clinic for the three year period was 15.6. Of the 17,105 individuals examined, 3,925, or 22.9 per cent, were diagnosed as tuberculous and 3,615, or 21.1 per cent, classed as suspects. It is thus seen that slightly over 7,500 individuals, or 41 per cent of the total clinic clientele, have been found during the three year period 1927-1930 who have either cases or potential cases of tuberculosis.

Certain data have been compiled concerning 1,944 patients who have been reexamined one or more times in an effort to estimate the progress being made in cases diagnosed initially by the chest clinics.

In comparing the reexamined group with the entire group, it is obvious that in the reexamined group the percentage of negatives will, and should be, considerably lower than that in the entire group. With respect to the distribution of positive and suspicious cases, the relative proportions in each group are essentially the same (table 1). In the reexamined group, 41 per cent were positive and 40.3 per cent were classed as suspects.

TABLE 1.—*Distribution of Positive, Suspicious and Negative Initial Diagnoses: All Clinic Patients* and Reexamined Group*

Initial Diagnosis	All Patients*		Reexamined Group		Per Cent Re-examined
	Number	Per Cent	Number	Per Cent	
All diagnoses	17,446	100.0	1,944	100.0	12.6
Positive	3,540	22.9	798	41.0	22.5
Suspicious	3,276	21.1	785	40.4	24.1
Negative	8,659	56.0	361	18.6	4.2

* Exclusive of those in Knox County.

Obviously, persons dying or becoming completely bedridden after the first examination are automatically excluded from reexamination. The latter, however, would not represent a much more severe group of cases than many of those who continue to go about. Those dying would undoubtedly be drawn largely from the relatively few patients who were in the advanced stages of the disease at the time of first examination. Hence, while our sample is somewhat selective, it would not seem to be radically atypical of the entire series of suspicious and positive clinic patients. At all events, the most important value of the present data is that they represent what has happened to a group of patients taking treatment at home under continued medical supervision.

COMPOSITION OF REEXAMINED GROUP

Of the 1,944 patients reexamined, only 91 were Negroes. Females in the group as a whole outnumbered males by about 1½ to 1, a ratio well in keeping with the apparent incidence of the disease in the two sexes. The median age of those examined was 21 years. Practically five sixths of the reexamined group were examined only twice; only about one in thirty were examined more than three times (table 2). The modal length of time under surveillance was a little less than a year, and the mean interval between examinations was thirteen months.

TABLE 2.—*Number of Times Examined: Reexamined Patients Only*

Times Examined	Number of Patients	Per Cent
Twice or more	1,944	100.0
Twice	1,602	82.4
3 times	286	14.7
4 times	45	2.3
5 times	5	0.3
6 times	3	0.2
7 times	2	0.1
8 times	1	*

* Less than 0.1 per cent.

OBSERVATIONS ON INITIAL EXAMINATION

For the purpose of study, the diagnoses of patients in the reexamined group are subdivided into nine groups, which may be arranged in such an order as to indicate, approximately, progress or retrogression, if the diagnosis changes from one rank to another. These

subdivisions are as follows: negative, suspicious, arrested, quiescent, childhood tuberculosis, minimal, active fibroid, moderately advanced and far advanced.

Eliminating arrested and quiescent cases, the percentage of active cases was found to be greatest among females between the ages of 25 and 30, while among males the incidence of active disease continued to increase up to 60 years of age.

IMPROVEMENT AND RETROGRESSION

Of 364 cases found negative on first examination, 77.7 per cent were again classed as negative on reexamination; 12.6 per cent became suspicious, and 9.7 per cent were classed as active or quiescent tuberculosis.

There were 782 cases on first examination classed as suspicious. On reexamination 38.9 per cent remained in the suspicious group; 34.9 per cent were classed as negative and 26.2 per cent as positive.

The progress of the cases initially diagnosed as quiescent disease can probably best be appraised by comparison with those which at first showed the active fibroid type of tuberculosis, since most of the changes represent a shift from one of these groups to the other. Of those initially quiescent, 30.9 per cent on reexamination showed activity. Of those at first classed as active fibroid tuberculosis, 33.0 per cent became quiescent. These observations are a natural reflection of the tendency of fibroid tuberculosis to have alternate periods of activity and quiescence.

In 172 children the diagnosis on first examination was childhood tuberculosis. On reexamination, 73.8 per cent of this number remained unchanged, while 23.8 per cent showed a definite improvement, and 2.3 per cent showed retrogression.

On initial examination, 77 cases were diagnosed as minimal, 152 as moderately advanced, and 36 as far advanced. On reexamination, clinical improvement was found in 37.7 per cent of the minimal group, 42.1 per cent of the moderately advanced group, and 16.7 per cent of the far advanced group. Thirteen per cent of the minimal group and 5.3 per cent of the moderately advanced cases showed an unfavorable change of diagnosis.

In arriving at the percentage of clinical improvement for the entire group, the 364 originally negative cases have been eliminated because of the fact that this group could not possibly show improvement on reexamination. Likewise, those which were far advanced on first examination have been eliminated from the total group, when percentage of retrogression was calculated. Therefore, of the total of 1,580 cases (1,944 less 364 originally negative) 493, or 31.2 per cent, showed clinical improvement. Of the total of 1,908 cases (1,944 less 36 originally far advanced) 346, or 18.1 per cent, showed retrogression. Of the total group, 56.8 per cent remained unchanged.

It is noted that, as regards clinical improvement, there is little apparent effect of age among males, but older females have a somewhat poorer outlook than younger ones. It is also noted that females as a whole make less favorable progress than males. The females showed a greater tendency to retrogress than did the males and, within each sex, older persons were more likely to retrogress than younger persons. Among females the rise in chances of retrogression came earlier in life than among males. For females the probability of an unfavorable change was relatively high at all ages above 15 years, while for males the probability of retrogression was relatively low until at least ten years later in life. This last observation conforms in general with the mortality experience of the two sexes in Tennessee.[2]

COMMENT

The foregoing analysis is the first attempt to appraise the accomplishments of the diagnostic clinics. It demonstrates that certain definite results have been accomplished, while, on the other hand, deficiencies are apparent. The number of Negroes examined and reexamined is far too low in comparison with the number of white individuals. There are various reasons to explain the low percentage examined in the Negro race; nevertheless, a concerted effort will be made in the future to correct this disproportion between the two races. The reexamined group is necessarily small, and likewise the average number of examinations per patient few, owing to the fact that the reexamination of patients is only a secondary activity of the program, the primary object being the location of unknown cases of the disease and the placement of such cases under medical care.

It is hoped that a more extensive experience, involving a substantial reexamined clientele, will allow for further analysis of data and consequently a more exact and specific approach to the general program.

301 Capitol Boulevard.

THE DISCOVERY AND PREVENTION OF TUBERCULOSIS IN THE COMMUNITY

A PROGRESS REPORT ON THE "TEN YEAR PROGRAM" IN MASSACHUSETTS *

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The "ten year program" for the discovery and prevention of tuberculosis in Massachusetts represents an attempt to apply in public health procedures the newer knowledge of childhood infection with tuberculosis. It was based on the assumption that proper treatment or supervision of children found to be suffering from the childhood type of tuberculosis would prevent the development of pulmonary tuberculosis in a large proportion of such infected individuals during adolescence and young adult life. Because any form of medical examination requires the consent of the individual or his parents, it was necessary to make the form of examination sufficiently simple to meet with general acceptance by the public. On account of the expense involved in a statewide program, the per capita cost had to be kept as low as was consistent with reasonable accuracy. For these reasons, Chadwick chose the Pirquet test, rather than the intracutaneous tuberculin test, and portable x-ray apparatus with flat instead of stereoscopic plates.

GROUP EXAMINED

The grade school group of children were selected for examination because infection was found to have taken place in a substantial number at that age, and it was the intention to pick out the infected individuals before

2. Sibley, Elbridge: Differential Mortality in Tennessee, 1917-1928, Nashville, Fisk University Press, 1930, p. 40 et seq.

* From the Massachusetts Department of Public Health.

* Read before the Section on Preventive and Industrial Medicine and Public Health at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 11, 1931.

active disease had developed. The accessibility of children in that age group was another deciding factor in clinics intended to reach a large part of the child population. Since the summer of 1929 the clinics have been extended to include high schools as well as the grades.

METHOD OF EXAMINATION

All children for whom consents are obtained are given the Pirquet test; the arms are read from seventy-two to ninety-six hours later and all children who react to the test are given roentgen examination of the chest. Only those who show roentgen evidence of infection are given physical examination. By the use of the tuberculin test and the roentgenogram as preliminary screens, it has proved possible to pick out the individuals suffering from active or latent tuberculosis and greatly to increase the number of children examined.

Reports of the clinical examination are sent to the family physician, as well as to the parents, and, when evidence of tuberculous disease is found, the clinic physician personally discusses the roentgenogram and the physical observations with the private physician. Both the adult and the childhood type of tuberculosis are reported to the local board of health. Children with pulmonary tuberculosis are recommended for sanatorium treatment. Children with the childhood type not exposed to further infection in the family and with medical supervision and adequate home care are kept under observation at home. Otherwise they also are recommended for the sanatorium. Seven hundred beds in state sanatoriums are provided for children suffering from the various forms of tuberculosis. All children examined who show positive or suggestive evidence of tubercle disease insufficient to warrant sanatorium care are referred to another state clinic group for observation and annual reexamination.

PRELIMINARY OBSERVATIONS

During the first six years of the program, 140,000 school children in 253 cities and towns have been given the Pirquet test. The percentage of reactors in different communities has varied from 16 to 34. In towns of less than 2,500, the percentage of reactors among contact children was slightly higher and among noncontact children slightly lower than in cities. For the whole group it was 26 per cent of the children tested. The proportion of reactors proved to be slightly more than twice as high among contact as among noncontact cases, but, contrary to expectation, the percentage of reactors in normal weight and underweight children was equal.[1] This finding has been confirmed by the work of Hetherington, Opie and their associates.[2] By age, the ratio of reactors rises consistently from about 15 per cent at 5 years to 50 per cent at the end of high school and in those cases in which it was determined has been twice as high among high school as among grade pupils. There has been no significant difference in the proportion of reactors among males and females.

Two and five-tenths per cent of the grade school children tested were found to show roentgen evidence of the childhood type of tuberculous infection in the lung fields or tracheobronchial lymph nodes and one out of every thousand to have pulmonary infiltration. The incidence of pulmonary tuberculosis has been six times as great in the high school as in the primary school population.

INTRACUTANEOUS AND PIRQUET TESTS

The greater delicacy of the intracutaneous tuberculin test as compared with the Pirquet or scarification type of test is generally accepted. The amount of old tuberculin absorbed from the intracutaneous test is definitely known, and by repeating the test much larger doses of tuberculin can be used. Smith,[3] using the two tests on the same children, found from 4 to 25 per cent more reactors with the Mantoux than with the Pirquet test.

In a recent series of tests in the Fernald School for the feebleminded, Aronson and Zacks [4] found that among 1,368 patients a total of 1,129, or 82.5 per cent, reacted to the intracutaneous test, compared with 854, or 62.5 per cent, to the Pirquet test. Two dilutions representing 0.01 and 1 mg. of old tuberculin were used for the intracutaneous test, and the Pirquet test was repeated as a control. In the public and parochial schools of a small Massachusetts city, the same workers found that, out of 2,642 children tested, 1,000, or 37.8 per cent, reacted to the two dilutions of old tuberculin by the Mantoux method, against 417, or 15.8 per cent, by the Pirquet test. For determining the exact incidence of tuberculous infection in a given population group, the superiority of the intracutaneous test seems evident. Does it pick out significantly more tuberculous disease?

ASSOCIATION OF TUBERCULIN REACTION WITH TUBERCULOUS DISEASE

In an attempt to answer this question an intensive study was made of the 1,368 individuals in the aforementioned school for feebleminded. In addition to two tests each, by the Mantoux and Pirquet methods, each patient had a roentgen examination of the chest, repeated when necessary until a satisfactory plate was obtained. All patients with roentgen evidence of disease were given thorough physical examinations, and individuals with questionable activity were placed in the hospital for observation. In the whole group, thirty-three cases of pulmonary tuberculosis were found. Of these, one, or 3 per cent, was missed by the 0.01 mg. and three, or 9 per cent, by the first Pirquet test. On retest, all cases reacted to 1 mg. intracutaneously and all but one, or 3 per cent, to the Pirquet test. Among 2,642 school children in the city of Revere, the same procedure was followed, except that there only children who reacted to one or both tuberculin tests were roentgenographed. In this group, no cases of active pulmonary tuberculosis were found. The two cases suggestive of pulmonary involvement and six cases of childhood tuberculosis that were found all reacted to both tests.

These observations seem to be consistent with the results obtained by Hetherington, McPhedran and their associates [2] in a study of some 4,000 school children in Philadelphia. Of the twenty-two cases of pulmonary tuberculosis found, all reacted to 0.01 mg. of old tuberculin intracutaneously. Of the twenty-one cases of latent apical tuberculosis, seventeen, or 81 per cent, reacted to 0.01 mg.; thirty-three out of thirty-six, or 91.7 per cent, of the children with latent infiltration and fifty-eight out of sixty-four, or 90.7 per cent of those with latent tracheobronchial tuberculosis, reacted also to the 0.01 mg. dose. In the whole series, 130 of the 143 cases of tuberculous disease, or 91 per cent, gave positive reactions to 0.01 mg. of old tuberculin.

1. Chadwick, H. D., and Zacks, David: Observations in the Underweight Clinics in Massachusetts, J. A. M. A. **89**: 670 (Aug. 27) 1927.
2. Hetherington, McPhedran, Landis and Opie: Am. Rev. Tuberc. **16**: 459 (Oct.) 1927.
3. Smith, C. H.: Tuberculin Skin Reactions, Am. J. Dis. Child. **38**: 1137 (Dec.) 1929.
4. Aronson, J. D., and Zacks, David: Unpublished data, by permission of the authors.

For practical purposes the scarification type of test may be considered equivalent to the intracutaneous test with 0.01 mg. of old tuberculin. In the series of Aronson and Zacks at the Fernald School, seventy more children, or 5.1 per cent of the total, reacted to the 0.01 mg. than to the Pirquet test. Among 2,642 children tested in the Revere schools, only 4 per cent who were negative to the Pirquet test reacted to the first Mantoux test.

If a single Mantoux test with 0.01 mg. or a Pirquet test, followed by roentgenograms of reactors, will pick out 90 per cent of children with significant tuberculous lesions, the use of additional tests means at least doubling the cost of examination to find an additional 10 per cent of cases. In Massachusetts there has been less popular objection to scarification than to any test involving a needle, and a slightly less accurate test which reaches a much larger proportion of the population may well uncover more tuberculosis than a method that is not generally acceptable to the public.

INFECTION AND THE FREQUENCY OF TUBERCULOUS DISEASE

In Cattaraugus County, N. Y., Korns [5] found that, with a tuberculosis death rate of 45, only 16.3 per cent of the grade school children reacted to the intracutaneous test with 0.01, 0.1 and 1.0 mg. In two Massachusetts cities of 100,000 and 150,000 there has recently been opportunity to compare reaction to the Pirquet test with the reported death rate from tuberculosis. In Springfield the mean death rate from pulmonary tuberculosis for the past five years was 42 per hundred thousand, and the percentage of reactors among the pupils of the grade and high schools was 21. For the same period the tuberculosis death rate in Lowell was 52, and the percentage of reactors among the school children was 34.1. The proportion of pulmonary cases discovered by the clinic in Lowell was over twice that found in Springfield, 1.4 for 1,000 children compared with 0.6, and the percentage of the childhood type of lesions was a third higher in Lowell. The proportion of children tested in the two cities was sufficient to assure fair sampling, 58 per cent of the total in Springfield and 65 per cent in Lowell.

CONSEQUENCE OF CHILDHOOD INFECTION

In the Chadwick Clinic all children who show positive or suggestive signs of childhood tuberculosis, but who are not hospitalized, and children with pulmonary infections who also remain at home are referred to the follow-up clinic for observation and annual reexamination. This check up includes roentgen examination of the chest, physical examination and, when practical, a Pirquet test. During the first three years of the clinic, approximately 5,000 children were referred for follow up. Most of these children have now been under observation from two to six years. On original diagnosis, 71 cases were classified as pulmonary tuberculosis, 1,477 as childhood tuberculosis, and 3,195 were carried as suspects. On roentgen examination the pulmonary cases showed definite pulmonary infiltration. The patients with childhood type had either visible tracheobronchial glands, primary nodules in the lung fields, or infiltrative lesions of the childhood type. The suspect group consisted of children with increased hilus shadows or questionable tracheobronchial adenitis. At the time of diagnosis, 57 per cent of the childhood type and 72 per cent of the pulmonary cases were among females.

During the period of observation, thirty new cases of pulmonary tuberculosis have developed in this follow-up group, nine in boys and twenty-one in girls. In this group the average age at which pulmonary tuberculosis was diagnosed was 15.4 years and the mean interval from the original examination to the development of pulmonary lesions was four years. The proportion of cases in which pulmonary tuberculosis developed was twice as high among children with the childhood type of lesions as in the suspect group, 0.93 compared with 0.46 per cent.

Of the whole observation group during a mean period of about three and a half years, pulmonary tuberculosis developed in 0.6 per cent, while the mean incidence of pulmonary disease in the total school population examined has been 0.1 per cent. This follow-up group constitutes about 15 per cent of the school population examined, and, if we assume that the mean interval required for pulmonary tuberculosis to develop from the childhood type of infection is about four years and that practically all the pulmonary cases come from this group, then the incidence found in the children followed, 0.6 per cent, corresponds quite closely with the incidence expected in the school population from which they were drawn.

Practically all the more recent workers in the field have emphasized the etiologic importance of household contact with pulmonary cases in the development of tuberculosis. In the whole follow-up group the proportion with a history of exposure at some time to an open case in the family was 40 per cent among males and 38 per cent among females. In the children with the childhood type of lesions it was 55 and 53 per cent, respectively, and, among the thirty in whom pulmonary tuberculosis developed while they were under observation, the contact rate was 78 per cent in boys and 71 per cent in girls. Perhaps this slightly higher exposure rate among boys is more than offset by a more intimate type of family contact among girls. At any rate, it suggests that the much higher morbidity rate among girls at adolescence, about 2.5 to 1 in the series cited, cannot be explained by more frequent exposure to the disease.

SUMMARY

In Massachusetts it has been found practicable to examine school children for tuberculous infection on a state-wide basis by the general application of the Pirquet test and the roentgenogram as a further screen for the reactors.

Although the Pirquet test is less sensitive than the intracutaneous test with two or more dilutions, its simplicity makes it much more acceptable when parental consents are required and so makes it possible to examine a larger proportion of the school population.

Studies on some 4,000 children in Massachusetts schools indicate that over 90 per cent of the patients with tuberculous lesions demonstrable by roentgenography react to the Pirquet test.

In certain Massachusetts cities studied, there appears to be a definite correlation between the tuberculosis death rate, the percentage of reactors in the public schools and the proportion of pulmonary tuberculosis found among school children.

In a group of children followed from two to six years, significantly more pulmonary tuberculosis has developed among those with the childhood type of the disease than in a "suspect" group.

5. Korns, J. H.: Report, Bureau of Tuberculosis, Cattaraugus Dept. of Health, 1930.

Exposure to open pulmonary tuberculosis in the household appears to be the most important single factor in the development of tuberculosis in children.

Control methods should include the family as well as the infected individual, and the effectiveness of such methods depends directly on education of the public in the essentials of control and on the active cooperation of practicing physicians.

State House.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. GASS AND BISHOP AND DR. POPE

DR. EUGENE L. OPIE, Philadelphia: In recent years I have found that there is a vast amount of important and grave tuberculous infection that is not evidenced as disease. This perhaps is one of the most important advances that have come in recent times. With this in view, it seems to me that a classification or a reclassification of tuberculous infection should be made, keeping in mind the fact that one must consider tuberculosis as an infection as well as an evident disease in order to obtain any comprehensive knowledge of it. It is highly important to separate latent from clinically manifest disease and to realize that among the latent lesions there are a large number that are on the borderline of clinical disease. Some unforeseen change of conditions will immediately convert them into clinical disease. There is another distinct point in classification that I think should be emphasized as a means of attaching the new to the old knowledge. That is the importance of sputum examinations. It seems to me that the distinction between clinical tuberculosis, with tubercle bacilli in the sputum, and latent tuberculosis is the most important distinction one can make from the standpoint of public health. On the one hand, if families are classified on that basis the children of the family exposed to open tuberculosis are in great danger. On the other hand, a large series of observations has shown that children exposed to tuberculous persons whose sputum is negative on repeated examination are in relatively little danger. I think this relation of the sputum examination to tuberculosis is an interesting one from the standpoint of public health. If diphtheria is suspected, no one thinks of neglecting the necessary procedures that will determine whether diphtheria bacilli are in the exudate or not. But the simple and obvious procedure of determining whether tubercle bacilli are in the sputum is one that is widely neglected. Laboratory facilities for the examination of the sputum from the public health standpoint should be practically unlimited within the needs of determining what is open and dangerous tuberculosis and what is sputum negative and relatively harmless as a disease.

DR. H. R. M. LANDIS, Philadelphia: These two papers, in conjunction with other work, particularly that instituted by Dr. Opie some eight years ago, are excellent illustrations of how the truth is ultimately arrived at. I am sure that there are many here who can recall that, at the beginning of the modern crusade against tuberculosis in this country, knowledge of childhood tuberculosis was almost unknown. At that time surveys were made of school children in large numbers in which the proportion of tuberculous children was often placed as high as 50, 60 or even 80 per cent. The interesting point is that the diagnosis of tuberculosis in children was for the most part based on palpable lymph nodes in the neck. It never seemed to occur to anybody, at that time, that the epitrochlear, the inguinal, the axillary and the submaxillary lymph nodes were equally accessible and that all of them are normally enlarged in children from the age of 2 up to puberty. Some years ago a pamphlet was issued by the National Tuberculosis Association giving in considerable detail the symptomatology and physical signs of tuberculosis as it occurred in young children. At that time roentgen examination played little or no part. That pamphlet might just as well have been issued as a standard for the diagnosis of tuberculosis in the adult. At that time the distinction between the adult and the infantile types of the disease was scarcely recognized. Undernourishment and underweight as evidences of tuberculosis in children is a fallacy that still persists in many places. There are institutions today that are taking in children that have no evidence of either the adult or the infantile type of tuberculosis but are simply undernourished. I do not want to detract from the importance of the building up of children of this type, but they have no place in a tuberculosis sanatorium. Ultimately, after twenty-five or thirty years, tuberculosis has been traced from the manifest and evident type of disease in the adult back to its beginnings. Roentgen examination and the tuberculin test have made it possible to pick out the child that is apt, if not given proper supervision, to develop clinical tuberculosis ultimately. I should like to emphasize the importance of sputum examinations. There are two types of tuberculous individuals that physicians come in contact with. First are the early closed cases that, from a public health standpoint, can be neglected so long as they remain closed as there is little danger of their infecting others. This does not mean that they are to be neglected. Every facility should be provided the person with closed tuberculosis to obtain a cure and prevent the lesion from breaking down and expelling tubercle bacilli. Second, there are the open cases, which, from a public health standpoint, are of the utmost importance, as it is from these cases that the disease spreads. Considering how easily the examination of the sputum for the presence of tubercle bacilli is made, it is remarkable how often this procedure for diagnostic purposes is neglected. Not only that, but periodic examinations of the sputum in positive cases are as often neglected. Any well conducted tuberculosis dispensary should be constantly alert to note the disappearance of bacilli in the open cases. As a matter of fact, I should say that a pretty good criterion of the type of work that the dispensary is doing is the number of sputum examinations. Even granting that it will entail hundreds of negative examinations, I think they must be done.

DR. MALCOLM C. ROSE, New York: Over thirty years ago it was said that unless tubercle bacilli were found in the sputum the patient didn't have tuberculosis. Dr. Head emphasizes that a great many physicians examined patients with tuberculosis and didn't know they had tuberculosis until they made the sputum test. I do not believe in a metric measure for the tuberculin test. I use the 1 cc. tuberculin syringe that is shown in this exhibition by Becton and Dickinson; the dose starts with 0.1 cc. and increases 0.1 cc., two doses each week. Dilutions are made with physiologic solution of sodium chloride with 0.1 per cent of pure phenol in it. Experience has shown that weak dilutions will not keep more than a week to ten days in a refrigerator. I have been using the tuberculin test for more than seventeen years and I know that it will work in babies and in adults. As a rough test, when one thinks that a person is tuberculous he should take the pulse, and, if a rate of from 90 to 130 is found, rule out heart and kidney disease, and then still keep thinking of tuberculosis, and make the tuberculin test. I am glad that the city of New York last September began testing with tuberculin.

DR. JAMES A. DOULL, Cleveland: As I understand Dr. Pope's report, in 70 per cent of cases discovered in schools in the Massachusetts survey there was a history of contact with a prior case in the family. This serves to emphasize a point made by Dr. Opie—that newer knowledge and methods must be linked to old. It has long been recognized that immediate contacts of tuberculous cases have a much higher risk of attack than other persons. Yet measures which would adequately protect these persons have never been vigorously pressed in any community, and I feel therefore that these investigations will be misinterpreted if they turn the major control efforts away from the family contact. School children have lower morbidity and mortality rates than either younger or older persons. Consequently the cost of detection of tuberculosis in the school is higher than at any other age. In their pioneer investigations in Philadelphia, Hetherington, McPhedran, Landis and Opie discovered 22 cases of active tuberculosis in a survey of some 4,000 children, the incidence being approximately 0.5 per cent. That is to say, it was necessary to examine 200 children to discover one case. The cost of this procedure, necessarily including roentgenograms of those tuberculin-positive, would probably not be less than $200 for each case discovered. I do not mean that one should leave cases of active tuberculosis in the schools. It may be quite possible to eliminate a high proportion without intensive examination. As already noted, 70 per cent of Dr. Pope's cases are family contacts. In the twenty-two Phila-

delphia cases, eight of the patients had fever (above 99.5 F.); four others had continued cough with purulent sputum, and two were familial contacts. One of those with cough had been found to have positive sputum at a municipal clinic one month prior to examination in school. Thus, fourteen of the twenty-two presented evidence sufficient to warrant special examination for tuberculosis. These comments are not intended to detract in any way from the observations presented in these excellent papers. Such investigations as those in Philadelphia, Massachusetts and Tennessee are fundamental and have already added greatly to the knowledge of the epidemiology of tuberculosis.

TREATMENT WITH MALARIA AND ACQUIRED ANAPHYLACTOID REACTION TO QUININE

SUCCESSFUL USE OF QUINIDINE

J. P. SANDERS, M.D.
CASPIANA, LA.

Dawson and Garbade [1] reported a case of anaphylactoid reaction to quinine in a subject who tolerated quinidine, and they noted that Giemsa and Werner [2] used quinidine successfully in the treatment of a patient with malaria who was unable to take quinine because of pronounced urticarial reaction to it.

In the summer of 1930, I used quinidine sulphate, U. S. P., in treating thirty-nine patients who had malaria. It was administered for four successive days, each dose being given from two to four hours before the hour at which the paroxysms had been occurring. The daily dose was 10 grains (0.65 Gm.). In every case, the immediate results of even this short treatment were prompt cessation of paroxysms and, in the majority of the cases in which blood smears could be secured, at least temporary disappearance of asexual parasites from the blood. The smears were examined by Dr. W. J. Sandige, director of the public health unit at Shreveport, La. There were seventeen cases which showed initial positive blood smears. Of these, five gave evidence of malignant malaria and twelve of the benign tertian form; the reactions in four of the former cases and in eight of the latter became and remained negative. The results are considered especially good since reinfection undoubtedly occurred in some cases. There were no bad effects. In the case reported here the patient had previously suffered considerably from malaria and from attempts to treat the infection with quinine, and was correspondingly grateful for the prompt relief afforded by quinidine. A positive cutaneous reaction was obtained to quinine, applied in solution to a scratch, but a negative reaction to quinidine. The patient is giving fine cooperation in a study of the "chemical boundaries" of her idiosyncrasy, a report of which will be published later. The results so far obtained are somewhat similar to those reported in a case by Dawson and Garbade. The patient's son, aged 24, had an urticarial reaction to quinine on the only occasion on which it was given him, at the age of 7, but gives a negative skin reaction to quinine.

REPORT OF CASE

History.—Mrs. C. L. B. was born in 1883. There is no history of quinine intolerance in the parents, or in a brother or sister, all now dead. It may be of significance that the mother died of malaria at about 25 years of age.

The patient had none of the childhood diseases except measles, and that at the age of 33. During a long illness with typhoid at the age of 8 years, a large quantity of quinine was taken, apparently without any difficulty arising. The idiosyncrasy to quinine first manifested itself when the patient was 18 or 20, when, on two occasions, "bromoquinine" given for a cold caused urticaria, swelling of the tongue and the throat, and dyspnea.

The patient married at the age of 20 and eleven months later gave birth to a son, now living. She has not since been pregnant.

The first attack of malaria occurred a few months after the birth of the child. After one or two doses of unknown size, she had to stop taking quinine because of the severe reactions, consisting of urticaria with wheal formation, nausea, vomiting and dyspnea. These reactions began fifteen or twenty minutes after the dose was swallowed and, except for the urticaria, which persisted some hours, continued until vomiting occurred.

For the next eleven or twelve years the patient was never free from malaria. During the attacks she was given sodium cacodylate intramuscularly, which gave temporary relief.

Since 1916, when she had measles, the patient had had bronchitis. She had also been troubled during the past decade with chronic constipation and intermittently with neuritis.

In 1928, I saw the patient for the first time. She had influenza. I gave her (even against her warning that she could not take quinine) a "cold capsule," which among other things contained one-eighth grain (0.008 Gm.) of quinine sulphate. In a few minutes she developed urticaria with wheal formation, dyspnea, pruritus, nausea and vomiting and was finally relieved when the medicine was vomited. Since then, needless to say, I have not given her quinine.

June 30, 1930, I found the patient ill with typical malaria. She had had three chills on alternate days and ached all over; she was nauseated, the spleen was enlarged, and the temperature was 103 F. The blood smear was positive for benign tertian malaria. She was sent to a hospital immediately and stayed for eleven or twelve days. While there she had two more chills and with the last chill had a temperature of 106 F.

During this period she took intravenous injections of neoarsphenamine every three days until four or five were taken. She also took one tablet of plasmochin every four hours for several days and then one tablet each night for about a week. The only other treatment she took was an initial purge that I gave her, June 30. At first plasmochin compound, which contains 2 grains (0.13 Gm.) of quinine per tablet, was tried. She had such a severe reaction that she was put on pure plasmochin. The improvement was gradual. The chills and fever subsided. She took strict and probably adequate precautions against reinfection.

Present Illness.—The patient came to me, Sept. 21, 1930, complaining of a fresh cold, saying that the bronchitis had gotten worse. She had had a light chill about noon the day before, when symptoms first appeared. The spleen was enlarged, the complexion was yellow and muddy and the temperature was about 102 F. A blood smear made by the thick smear method and stained with Geimsa's stain was positive for benign tertian malaria. By September 26 the patient had three more chills, making four in all. She showed a positive skin reaction to quinine sulphate solution applied to a light scratch in the skin but not to quinidine sulphate.

Treatment and Course.—Therefore, I decided to try the effect of treatment with quinidine. A preliminary trial dose of 5 grains (0.3 Gm.) produced no untoward effects. September 28, quinidine sulphate in doses of 10 grains (0.65 Gm.) was started at 8 a. m. and continued similarly one dose daily for four days. The patient had no other chill or fever, the bronchitis subsided rapidly, the spleen became normal in size, the appetite improved, and the patient became clinically well. Blood smears made at weekly intervals were negative for malaria till March 30, 1931, when benign tertian parasites were found, possibly a new infection. The patient was still symptom free, but quinidine treatment was given for four days, starting April 2, with prompt and persistent parasitic cure.

1. Dawson, W. T., and Garbade, F. A.: Idiosyncrasy to Quinine, Cinchonidine and Ethylhydrocupreine and other Levorotatory Alkaloids of the Cinchona Series: Preliminary Report, J. A. M. A. 94: 704-705 (March 8) 1930. Further Chemical Delimitation of the Idiosyncrasy, J. Pharmacol. & Exper. Therap. 39: 417-424 (Aug.) 1930.
2. Giemsa, G., and Werner, H., quoted by Dawson and Garbade (footnote 1).

SUMMARY

Benign tertian malaria in a patient with acquired anaphylactoid reaction to quinine was successfully treated with quinidine, the dextrorotatory isomer of quinine, without discomfort to the patient.

A positive skin test was obtained to quinine but not to its dextrorotatory isomer, quinidine.

A son appeared to have inherited a form of quinine intolerance, as he suffered from urticaria on the one occasion when it was given, but he gave a negative skin test to quinine.

Quinidine sulphate, U. S. P., given in 10 grain (0.65 Gm.) doses once a day about two to four hours before the ordinary hour of the paroxysm, has given prompt and good results in a small series of patients with malaria.

The results strengthen the suggestion of Dawson and Garbade that quinidine may well be given a trial in the treatment of malaria in cases of quinine intolerance.

Clinical Notes, Suggestions and New Instruments

THALLIUM ACETATE POISONING IN THE TREATMENT OF RINGWORM OF THE SCALP: REPORT OF TWO CASES *

MORRIS GLEICH, M.D., NEW YORK

About twenty years ago, Sabouraud [1] introduced a 1 per cent thallium acetate ointment for the treatment of ringworm of the scalp. He emphasized the toxicity of thallium acetate. If one uses an ointment containing more than 1 per cent of thallium acetate or if one applies the ointment too extensively, accidents may be expected. Sabouraud eventually abandoned this method as well as the oral administration of thallium acetate.

About a year ago, fourteen children died of thallium acetate poisoning in Granada.[2] They developed symptoms of myelo-encephalitis or acute respiratory manifestations two days after ingesting the drug for the treatment of ringworm of the scalp. Necropsies confirmed the presence of lesions caused by that drug. This catastrophe should be reported as a warning against the dangers of thallium acetate, the epilatory or therapeutic dose of which is so near the limit of the lethal dose.

It has been insisted by Rodriguez y Mateos [3] that thallium acetate be given orally only. All other routes of administration should be avoided, since intoxications may occur. This dermatologist admits that roentgen treatment, when properly given, is as effective as thallium acetate. In fact, he suggests giving half a dose of both, thus avoiding the possible intoxication of thallium and the dermatitis of the rays.

Buschke [4] produced alopecia in rabbits, guinea-pigs and mice in fourteen days with the use of thallium acetate. On the eighteenth day, all the animals died, with the symptoms of enteritis and increasing stupor. Thallium acetate inhibits the development and metamorphosis of tadpoles, inhibits the growth of rats, and produces cataract, atrophy of the testicles, diminished sexual activity and bony changes in rats, similar to rickets.

In a man, according to Prokoptchouk,[4] a Swedish dermatologist, thallium acetate produces a folliculitis and a toxic eruption hemorrhagic in character, with petechiae and ecchymosis similar to the ones produced by mercury and bismuth. Besides gingivitis, glossitis and stomatitis (even in its ulcerative form) there occur the phenomena of thallium angina. These changes may be accompanied by herpetic symptoms, rhagades on the lips, diarrhea and severe abdominal pains. The mucous linings of the stomach and intestine are hemorrhagic, and the latter presents the picture of desquamative or ulcerative colitis. Other changes noted are hemorrhage and necrosis in the liver and nephritis. Acting through the sympathetic nervous system, thallium produces chorea-like movements. Thallium also produces polyneuritis, disturbances of blood vessels, including the peripheral vessels of the brain, and cerebral hemorrhages. The joints become painful, tender and swollen. Fever is present. Achlorhydria, secondary anemia, lymphocytosis and eosinophilia also result.

Here, then, are three leading dermatologists emphasizing the toxicity of thallium acetate.

REPORT OF CASES

CASE 1.—B. M., a boy, aged 7 years, was given an oral dose of thallium acetate for the treatment of ringworm of the scalp. Two days later he was unable to walk, talk or swallow. He could not chew. Four days afterward his limbs ached and he grew drowsy. The face swelled. Soon the head was retracted and he was gasping for breath.

On admission to the hospital, he was unconscious. The extremities were flaccid and all reflexes diminished. He had a masklike expression. Breathing was hardly noticeable. The pupils were fixed. The heart sounds were of poor quality, but the lungs were clear. There was no nuchal rigidity. He had a stomatitis.

The spinal fluid was clear and under increased pressure. There were 50 cells per field; mostly lymphocytes were noted. The Levinson test gave negative results. Smear and culture from the spinal fluid were negative for organisms. Urea, creatinine and dextrose were within normal limits. The blood pressure was 126 systolic and 90 diastolic. The urine had a specific gravity of 1.028 and showed albumin one plus and occasional granular casts. The blood count was 4,600; polymorphonuclears, 72 per cent; lymphocytes, 28 per cent.

The next day the patient had a convulsion lasting ten minutes. Throughout the day there were jactitating movements of the extremities. He was still semicomatose but at one time regained consciousness for a short while and was able to speak. He soon lapsed into unconsciousness and died the next day.

CASE 2.—K. M., a boy, aged 5 years, was also given one oral dose of thallium acetate for treatment of ringworm of the scalp (8 m. per kilogram of body weight). The medication was given, as in case 1, on an empty stomach and in sweetened water. Within forty-eight hours the patient had a cough and a temperature of 101 F., and he vomited a little. Six days later a physician found a patch of consolidation in the left lower lobe and a temperature of 101. At the end of ten days the patient was very toxic and restless, and both lungs were congested. The temperature was 100 and he was semicomatose.

On admission to the hospital, he was moribund. The pupils were fixed and dilated. He was unconscious. The heart beats were rapid, irregular and of poor quality. He was dyspneic. There were dulness, moist râles and bronchial breathing in both lungs, indicating pneumonia and pulmonary edema. The mouth and pharynx showed a frothy discharge. The patient died on the day of admission.

Both children showed myelo-encephalic symptoms. The younger child also exhibited respiratory symptoms. Both children were toxic two days after taking thallium acetate and in twelve days were dead.

COMMENT

The indiscriminate use of thallium acetate by those not familiar with its indications and contraindications and its grave toxic qualities is warned against emphatically. In fact, since there are other successful methods of treating ringworm of the scalp and since the therapeutic dose is so near the limit of the lethal dose, the abolition of this drug is suggested.

9 Post Avenue.

* From the Pediatric Department, Harlem Hospital.

1. Dangers from Use of Thallium Acetate, Paris Letter, J. A. M. A. **94**: 197 (Jan. 18) 1930.
2. Thallium Acetate Kills Fourteen Children, Madrid Letter, J. A. M. A. **94**: 1422 (May 3) 1930.
3. Rodriguez-Izquierdo y Mateos, G.: Thallium Acetate in Epilation Treatment of Tinea in Children, Arch. españ. de pediat. **14**: 129 (March) 1930; abstr. J. A. M. A. **95**: 698 (Aug. 30) 1930.
4. Cited by Felden, B. F.: Epilation with Thallium Acetate in the Treatment of Ringworm of the Scalp in Children, Arch. Dermat. & Syph. **17**: 182 (Feb.) 1928.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED THE PUBLICATION OF THE FOLLOWING REPORTS.

W. A. PUCKNER, Secretary.

FRENLY ENEMA CREAM NOT ACCEPTABLE FOR N. N. R.

Frenly Enema Cream (Frenly Products, Inc., New York City) is offered to physicians without a statement of composition either on the label or in the advertising. Whether used intentionally for its advertising value or necessarily because it is the name of the owner, the word "Frenly" thus punningly associated with "Enema" is to say the least in very bad taste. The name is undoubtedly therapeutically suggestive since it plainly states the use for which the product is intended. In the information furnished the Council the preparation is stated to have the following composition: "Powdered Acacia ½ oz., Powdered Tragacanth ¼ oz., Castor Oil 6 ozs., Glycerine 1 oz., Sodium Iodide 40 Grains, Menthol 20 Grains, Alcohol 95% 1 Dram, Ichthyol 2 Drams, Benzoate of Soda 2%, Water q. s. ad 20 ozs." The advertising contains the following exaggerated statement concerning the evils of constipation and need of artificial evacuation: "Most physicians realize that cleanliness of the colon is one of the most essential factors in the continuance of health and that elemination of poisons is necessary to our well being and happiness. Many scientists state that the source of acidosis is in the transverse colon. Recently a physician over eighty years old who was enjoying remarkably good health said that his real secret was: keeping the sewer clean." The advertising contains the following unwarranted disparagement of soap suds enemas: "Heretofore soap has been recommended in water for enemas. But soap is a strong irritating compound useful for the skin only. It is irritating to the eye and there is every reason to believe that it irritates the delicate tissues of the intestine." No evidence is offered in the advertising, nor was evidence furnished the Council to show that the addition of castor oil, glycerin, sodium iodide, menthol, sodium benzoate and ichthyol to a rectal enema is rational. While castor oil is the only ingredient which is present in considerable amount, there appears to be no evidence that the drug is efficacious when administered by rectum. Castor oil acts by increasing peristalsis in the small intestine, while in the colon the normal antiperistalsis is allayed so that the feces escape concentration (Sollmann's Manual of Pharmacology, ed. 3, p. 232). It is therefore a question whether castor oil is effective when administered as an enema.

There is no reason to believe that any of the ingredients of the cream, which is directed to be administered in the proportion of a tablespoonful to a quart of water, will add materially to the effects of the water, since an enema of one quart of water usually causes a prompt evacuation. It should be pointed out here that the rectal enema consisting of a large amount of liquid is by no means the harmless procedure it is commonly supposed to be. It often carries fecal matter from the colon into the small intestine. Without doubt the colon normally fails to absorb several of the products of putrefaction; and when by any means these are carried into the small intestine, they are absorbed, with unpleasant and sometimes dangerous results.

Frenly Enema Cream is unacceptable for New and Nonofficial Remedies because it is a complex unscientific mixture which is marketed under a name that is uninforming as to composition and is therapeutically suggestive; without a declaration of composition on the label or in the advertising; and with claims that are unwarranted.

ALBUTESTA

(MENLEY AND JAMES, LTD.)

An Old Reagent Masquerades Under a Proprietary Name.

The A. M. A. Chemical Laboratory found Albutesta to be a twenty per cent solution of sulphosalicylic acid.

It is not new; just an old reagent with a new name at a fancy price.

The AMA Chemical Laboratory contends that the composition of diagnostic reagents should be known so that users may know the limitations.

A poster designed for the A. M. A. Chemical Laboratory exhibit at the Annual Sessions of the American Medical Association. When a well-known substance is marketed with a proprietary name, hiding its real identity, and masquerading as a unique reagent, it is time for the forces, which the physician has created to safeguard himself, to report the truth to him. The A. M. A. Chemical Laboratory has done this (THE JOURNAL A. M. A. 95, Nov. 1, 1930).

"MINERALOGEN" NOT ACCEPTABLE FOR N. N. R.

Under the name "Mineralogen," Von Bremen-Asche-deBruyn, New York, offers a mixture stated to be manufactured by "Pharma" Max Lockinger & Co., Berlin, and stated to contain, in 100 parts: "Calcium phosphate, 25.61; Calcium lactate, 49.250; Magnesium sulphate, 2.956; Sodium sulphate, 3.450; Bismuth subnitrate, 1.725; Strontium lactate, 1.477; Sodium bromide, 7.88; Sodium silicate, 1.477; Alum ust., 0.736; Albumin leviss., 5.439." The therapeutic indications for "Mineralogen" are stated to be chiefly the following: "In the Gerson-Herrmannsdorfer - Sauerbruch dietetic treatment of skin tuberculosis, Th. fungosa, scrofuloderma, tuberculosis of bones, glands, mucosa, kidneys and bladder, pulmonary tuberculosis, and in the dietetic preoperative and postoperative treatment of pulmonary tuberculosis."

"Mineralogen" is part and parcel of the Gerson-Herrmannsdorfer-Sauerbruch dietetic treatment of tuberculosis and, according to the stated formula, consists of a mixture of nine salts, seven of which are included in the U. S. Pharmacopeia. The chief constituents are calcium phosphate and calcium lactate. The distributors claim that when this mixture is used with the Gerson diet and a low sodium chloride intake there is an improvement in patients suffering from bone, joint and pulmonary tuberculosis, but especially in those who have skin tuberculosis. There is also stated to be a more rapid healing of wounds. Some confusion seems to exist as to whether "Mineralogen" is preponderatingly acid or basic in its effect on the human organism.

The name "Mineralogen" does not indicate its chief ingredients, calcium phosphate and calcium lactate, and it is therapeutically suggestive. The advertising recommends the use of two products not accepted for New and Nonofficial Remedies: Eujecor with Phosphorus, stated to be cod liver oil and phosphorus, which the Council found unacceptable, and Eugusal, stated to be a sodium chloride substitute, the composition of

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which is not given in the advertising. The chief objection to "Mineralogen," however, is the lack of evidence for its therapeutic usefulness: it will be extremely difficult for the distributor to prove that this complex mixture of salts is any more effective than calcium phosphate or calcium lactate; also, it will be difficult to prove that "Mineralogen" plus the Gerson diet gives any better results than the Gerson diet alone. No conclusive evidence on these points has been made available nor has any careful scientific attempt been made apparently to test this point. If "Mineralogen" is always given together with a vitamin-rich, carefully prepared diet and a low sodium chloride intake, it will not be possible to say how much is due to the diet and how much to the mixture of salts. Even the Gerson-Herrmannsdorfer-Sauerbruch regimen is itself still under trial, although there have been several favorable reports of its beneficial results, especially in lupus.

The Council finds Mineralogen unacceptable for New and Nonofficial Remedies because the name is therapeutically suggestive and does not indicate the composition; because it is a complex mixture of salts containing constituents the therapeutic value of which has not been demonstrated; and because the therapeutic value of this mixture as an adjuvant to the tuberculosis diet has not been established.

STREPTOCOLL NOT ACCEPTABLE FOR N. N. R.

Streptocoll (The Soshokee Co., East Orange, N. J.) was presented for consideration by the Council as "a very active form of colloidal sulphur which differs from all other colloids of sulphur in that it contains no protective colloid." The name "Colloidal Sulphur 339" was given as a synonym, and willingness was expressed to use this as the name of the product. The information concerning the composition of the product was inadequate, and tests and standards for the control of identity and uniformity of the product were not given. As evidence for the value of the product some case reports were presented, together with the reprint of an article by Drs. Monaghan and Garai.

The preparation is proposed for oral or intravenous use in a variety of conditions. In the information furnished the Council the following is given:

"*I. Intravenous:* 1. Abscess, cellulitis, and phlebitis. 2. Septicemia—especially streptococcus hemolyticus and staphylococcus. 3. Carbuncle and furunculosis. 4. Arthritis. (A) Gonorrheal—acute and subacute and to a lesser extent, chronic. (B) Mono or polyarthritis from focal infection. Contraindicated in rheumatic arthritis. 5. Pneumonia—In the stage of invasion, before consolidation has been completed. 6. Infected ulcers or malignancy where there is much toxic absorption. 7. Chronic mild sepsis from absorption from a cryptic focus of pus. 8. Acute upper respiratory infections. Certain types respond well; others little, or not at all. 9. Neuritis and myositis from focal infection. *II. Internal:* It is recommended in all of the above, where it assists the intravenous material slightly. It is specifically recommended for 1. Acute and subacute and recurrent coryza. 2. Neuritis, myositis, and mild arthritis. 3. Asthma—from sensitization to bacterial toxins. 4. Arsenic poisoning—especially from arsphenamine—last in arsenical dermatitis. 5. Chronic intestinal stasis, with consequent absorption of intestinal toxins. 6. Furunculosis."

The name Streptocoll is entirely unsuitable, since it gives no indication as to the nature of the product and is therapeutically suggestive. Colloidal sulphur 339, which it is proposed to adopt if the name Streptocoll is not acceptable, might be acceptable. On the other hand, the nature of the product is not clear nor is any idea given as to how it is prepared. Furthermore, the list of therapeutic indications approaches absurdity. The paper by Monaghan and Garai, after an unessential discussion concerning sulphur therapy and sulphur in body chemistry and its use in therapeutic conditions, reports five cases, two of them of the arthritis deformans variety and the others diagnosed polyarthritis. The case reports are not given in sufficient detail to permit judgment; there is no indication that the treatment used had anything to do with any improvement stated.

The Council declared Streptocoll unacceptable for New and Nonofficial Remedies because the name Streptocoll is uninforming and therapeutically suggestive and because the composition of the product is indefinite and the therapeutic claims unwarranted.

Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

MY BREAD

Manufacturer.—My Bread Baking Company, New Bedford, Mass.

Description.—A white bread made by the straight dough method.

Manufacture.—The dough ingredients, patent flour of Southwest wheat, water, salt, sucrose, lard, powdered skim milk, yeast, and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride, and potassium bromate, are mixed in a high speed mixer. The dough is fermented for from two and one-half to three hours, molded into loaf form, panned, baked for from thirty to thirty-five minutes, cooled, and wrapped in wax-paper.

The factory, equipment and storage rooms for the materials used are kept in strictly sanitary condition.

Chemical Composition.—

(proximate analysis)	per cent
Moisture (entire loaf)	36.5
Ash	0.83
Fat (direct extraction with ether)	1.2
Protein (N × 6.25)	8.8
Crude fiber	0.3
Carbohydrates (by difference) other than crude fiber	52.4

Calories.— 2.56 per gram
72.7 per ounce

Claims of Manufacturer.—A bread of good quality.

HARVEST BREAD (HECHT'S)

Manufacturer.—Hecht's Bakery, Bristol, Tenn.

Description.—A white bread made by the sponge dough method.

Manufacture.—The sponge dough ingredients, patent flours of Northwest and Southwest wheats, water, shortening, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, are mixed in a high speed mixer. The sponge dough is fermented for from four to five hours, after which are added flour, water, salt, shortening, dextrose, and sweetened condensed skim milk to make the completed dough, which is cut into pieces of desired weight. The pieces are fermented for a short time, molded into loaf form, panned, further fermented, baked for from thirty to thirty-five minutes, cooled and wrapped in wax-paper.

The factory, equipment and storage rooms for the materials used are kept in strictly sanitary condition.

Chemical Composition.—

(proximate analysis)	per cent
Moisture (entire loaf)	37.4
Ash	1.7
Fat (ether extract)	3.5
Protein (N × 6.25)	9.4
Crude fiber	0.2
Carbohydrates (by difference) other than crude fiber	47.8

Calories.— 2.60 per gram
73.8 per ounce

Claims of Manufacturer.—A bread of good quality.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, SEPTEMBER 19, 1931

THE CARE OF VETERANS

At the annual session of the American Medical Association held in Philadelphia, the House of Delegates adopted a resolution urging the federal government to discontinue its plans of hospitalization in government institutions for all disabilities incurred by veterans regardless of whether or not such injuries or illnesses were in any way related to service in the war, and to provide instead a system of cash benefits to veterans who have incurred disabilities. Already several posts of the American Legion have endorsed this plan. The record of our government in the care of its veterans surpasses in lavishness that of any other nation in the world. At a time when stringent economies in expenditure are necessary this fact must be emphasized. Immediately after the World War, plans were made to provide hospitalization for every veteran who might be suffering from a disability incurred during the war, or a disability that might be remotely related to his war service. Then in 1924 it was revealed that numerous beds in government hospitals were unoccupied. Legislation was introduced to provide also for the hospitalization of veterans with disabilities not of service origin, with the understanding that indigent veterans were to get first choice. The beds available have multiplied enormously. Even now, however, plans are proposed for increasing the number still further, notwithstanding that a survey recently made indicated that more than 200,000 beds in civilian hospitals are unoccupied and that many civilian institutions face ruin for this reason.

The mathematics of the situation is simple. There are at present some fifty-three veterans' hospitals with approximately 26,000 beds. Because of the policy of taking care of veterans for all disabilities regardless of their service origin, the Veterans' Bureau estimates that 130,000 beds will be required. The average cost of construction of a hospital is from $3,000 to $3,400 a bed; the mere cost of construction will therefore approximate $300,000,000. The cost of maintenance will be well over $200,000,000 a year, not including the cost of maintenance of the staff, which would be approximately $20,000,000 a year more. What a prospect for a period of financial depression! With these institutions once created and operating, the government is confronted with two alternatives: It may continue indefinitely to give free medical care, enlarging the group cared for, thereby keeping beds occupied and the Veterans' Bureau intact, or it may look forward ultimately to disbanding the Veterans' Bureau and to scrapping the million dollar institutions it proposes to construct.

The psychology of the situation is again simple. A bureau once established begins to expand, to grow and to forestall dissolution. The Veterans' Bureau, if it wishes to continue as a thriving and growing organization, naturally will support plans for extending its hospital facilities and its personnel.

There are many reasons why the people of the United States and the medical profession must oppose unreasoning expansion of the Veterans' Bureau and why they should consider alternative plans such as that providing cash benefits to disabled veterans. These reasons are so logical and so inherently sound that they must appeal to every thinking person. The continued building of veterans' hospitals and the enlargement of the Veterans' Bureau constitute an insidious approach to state medicine. The actual needs of veterans will gradually be exceeded by the medical provisions available. Then socialistically and communistically minded demagogues will demand that the state administer care to all individuals as it has attempted to care for veterans. Such a procedure would strike at the fundamental principles of the democracy under which we live and for which our veterans fought. It would impair greatly the progress of medical science; it would destroy interest in medicine as a career. It would lead to the poor type of medical service given to people under similar systems abroad.

The veteran today must go to a veterans' hospital selected for him by the Veterans' Bureau even though it is some distance from his home. Thus he is removed from his family to become a ward of the state. Government employees, whose primary allegiance must be to the government which employs them rather than to the veteran who is served, examine and diagnose his case. Free choice of physician and responsibility to the patient rather than to any other employer is so fundamental in first rate medical practice that it has been recognized even by governments that are experimenting with state medical care. Government bureaus do not provide for this type of practice.

It has been argued that veterans, permitted to choose their own physicians, will succumb to quackery. The argument is not warranted by the experience of state insurance systems that permit free choice of physicians. Our veterans as a group are certainly as intelligent as the rest of the public. It is unlikely that

they will choose quackery any more than the rest of the people choose quackery in times of illness.

A plan that would insure care for the disabilities of veterans by payment to the veteran of a regular cash benefit during the period of his disability would insure free choice of physician and hospitalization at home, and would be far less costly than any other system. Insurance actuaries estimate that cash benefits could not amount to more than $80,000,000 a year. Adding to this the cost of administration, control and payment for hospitalization, the total cost would hardly exceed $100,000,000 the first year, and would diminish gradually as veterans grew older.

Already many leaders of the American Legion have seen the wisdom of the proposed plan. Many individual posts have gone on record as favoring the system of cash benefits. American soldiers who fought in Europe and who served in this country were inspired by the ideal of maintaining the great American democracy. Our system of government gives the individual free choice of his method of life; it gives him a voice in selecting his government and the laws by which he will be governed. The present plan of hospitalization for the disabled and the possible extension of this hospitalization to the care of all veterans, to the families of veterans and, indeed, to other persons in the government service is a threat at the very foundation of our government. It will, no doubt, arouse chortles of joy among socialistic and communistic leaders.

The resolution adopted by the House of Delegates deserves the support of the entire medical profession whether in or out of the American Legion. Those members who are also members of the American Legion may help both the veterans and the profession by their help in disseminating a proper understanding of the situation. Those who have allowed their membership in the American Legion to lapse and those who did not join the American Legion may well interest themselves in the veterans' organization for the same reason.

SPLENECTOMY IN PURPURA HEMORRHAGICA

In 1916 Kaznelson [1] reported an increase of platelets and a disappearance of hemorrhages in purpura hemorrhagica following splenectomy. Since then the literature has contained many clinical reports of the value of this procedure. Animal experimentation, however, has not supported the clinical observations. It has been frequently shown that splenectomy in normal animals causes a considerable increase in the number of platelets in the blood stream. Bedson [2] found that the platelet count returned to normal in three weeks after splenectomy in normal guinea-pigs. Bedson [3] blocked the reticulo-endothelial system with carbon particles and observed a considerable increase in platelets. He [3] also produced an experimental purpura in guinea-pigs with an antiplatelet serum. Splenectomy gave the animals a degree of protection. He declared that splenectomy gives only temporary relief in purpura hemorrhagica. Dawbarn, Earlam and Evans [4] found that the platelets in man increased with other operations as well as in splenectomy. Bachman and Hultgren [5] found that the thrombocytosis induced by splenectomy was greater and of longer duration than after other operative procedures.

Recently Steiner and Gunn [6] have attempted to determine the effect of traumatism and splenectomy on the platelet count in rabbits. In one group, when the splenic pedicle was clamped with artery forceps and the spleen removed, the platelet count increased on an average of 118 per cent. In the second group a careful ligation was done and the spleen removed. The increase in platelets in this group was only 69 per cent. In another group splenectomy was done and then after three or four weeks, when the count had returned to normal, a control operation was done. The increase with the two operations was essentially the same. In a fourth group the control operation was done first and the splenectomy three or four weeks later. The rise in platelets was again the same in the two operations. Other operations verified the fact that traumatism played an important part in the increase in platelets. The authors concluded that splenectomy causes no greater increase in platelets than do other operations in which an equal amount of traumatism is necessary, and that the degree of rise of platelets depends on the amount of traumatism produced in the operation.

Spence [7] reviewed 101 cases of purpura hemorrhagica with splenectomy reported in the literature. He found that 80 per cent of cases of the chronic type of the disease were regarded as cured after the operation. Only a small part of the cases had been observed more than a few months after operation. Some cases which showed no recurrence of hemorrhages gave a low platelet count after operation. Spence reported three of Kaznelson's cases which presented normal platelet counts and no clinical manifestations four or more years after operation. According to Ordway and Gorham,[8] Whipple has seen a recurrence two years after operation. He declares that cases should be followed for from three to five years before one can say that a cure has been effected. It is possible that splenectomy in man stimulates a platelet response which lasts sometimes until a natural remission occurs. This would explain the favorable clinical reports. It would seem

1. Kaznelson, P.: Wien. klin. Wchnschr. **29**: 1451, 1916.
2. Bedson, S. P.: Lancet **2**: 1117 (Nov. 29) 1924.
3. Bedson, S. P.: Brit. J. Exper. Path. **7**: 317 (Oct.) 1926.
4. Dawbarn, R. Y.; Earlam, F., and Evans, W. H.: J. Path. & Bact. **31**: 833 (Oct.) 1928.
5. Bachman, E. L., and Hultgren, G.: Compt. rend. Soc. de biol. **94**: 942, 1926.
6. Steiner, P. E., and Gunn, F. D.: Proc. Soc. Exper. Biol. & Med. **28**: 1088, 1931.
7. Spence, A. W.: Brit. J. Surg. **15**: 466 (Jan.) 1928.
8. Ordway, Thomas; and Gorham, W. L.: The Diagnosis and Treatment of Diseases of the Blood, Oxford Monographs, New York, Oxford University Press, 1930.

that the clinician should observe the natural history of purpura hemorrhagica in the unsplenectomized patient as well as all splenectomized patients for several years. The more remote effects of other operative procedures on the platelet count in normal persons and in those having purpura hemorrhagica should be investigated also.

ELECTROSURGICAL REMOVAL OF TONSILS

For more than ten years, physicians have been experimenting with removal of the tonsils by electrical desiccation. Various methods have been described for accomplishing this result. The apparatus employed provides for surface dehydration, for penetration of the mass or for the use of the endothermic knife. In a recent issue of the *Archives of Otolaryngology*, Dr. Lewis J. Silvers [1] reviewed his own experiences of some six years in this field. He comes to the conclusion, in which he is joined by Skillern, that electrocoagulation is an entirely safe and commendable procedure when complications contraindicate the usual radical method. The method is not, however, wholly without danger and certainly requires as much skill and knowledge as is required for surgical removal. For this reason Silvers urges the use of electrosurgical desiccation for young patients with heart disease, tuberculosis or nephritis and the occasional use of the endothermic knife for the freeing of the pillar or for other cutting procedures. There are other instances in which it is necessary to combine the use of the snare or dissection with electrical desiccation. Among the advantages of electrosurgical methods he lists complete control of the operative procedure, accomplishment of the entire process of extirpation in any desired number of treatments, absence of shock and pain, prevention of hemorrhage, sterilization of the tonsils, and avoidance of anesthesia. Among the disadvantages which he lists are the time required for safely controlled removal and the time and effort required by the operator to master the technic.

Many considerations must enter into the decision of the individual physician in the individual case as to whether or not electrocoagulation or surgical removal is to be the method of choice. Economically, surgical removal is less time consuming and probably less expensive than electrical desiccation. It requires a lesser number of visits to the physician and by the physician. Apparently, in the hands of the unskilled, electrocoagulation may result in secondary sloughing and in abscesses much worse than those which rarely occur with surgical removal. Instances are on record in which the secondary complications have included such severe swelling and edema as to threaten the life of the patient. Some of those who have written on the subject urge that the method be employed only for adults, whereas other observers urge its value in young patients.

Electrosurgical removal of the tonsil cannot yet be considered established as the most desirable method for routine removal of the tonsils. A competent operator, who has been thoroughly trained in the use of the method and who understands how to select his cases correctly, may get excellent results by its use. However, those who have not had special training of sufficient length may have unfortunate and indeed serious results with this technic.

Manufacturers of devices for this type of work have, with the usual commercial solicitude for disposing of the greatest amount of apparatus possible, offered three-day courses to general practitioners, who have then considered themselves competent to undertake electrosurgical removal of the tonsils. Unless they have a thorough understanding of the structure of the throat, of pathologic changes incident to removal of the tonsils, and of the possible complications associated with the electrosurgical method, the patients are likely to suffer. The unreasoning and unscientific promotion of this method not only by manufacturers but by some writers on health subjects for the lay press has done incalculable harm. In the vast majority of cases, electrosurgical removal of the tonsils has not yet been proved to be the method of choice. This should not interfere, however, with its application in properly selected instances.

1. Silvers, L. J.: Electrosurgical Extirpation of the Tonsils: A Clinical Study of the Various Methods Employed, with Their End-Results, Arch. Otolaryng. **12**: 511 (Oct.) 1930.

Current Comment

PROTEIN-FREE ANTISERUMS

Preparation of antiserums free from all allergic agents has been the hope of immunochemists since the first unfortunate accident with diphtheria antitoxin. This hope will no doubt be realized ultimately. Encouraging in this connection is the alleged preparation of protein-free serum "eluates," containing specific antitoxins, agglutinins, hemolysins and complement-deviating "antibodies." While the conclusion that these "eluates" are protein-free must be taken with considerable reserve from published evidence, the "eluates" presumably represent the nearest approach to protein-free "antibodies" thus far prepared. About two years ago, Frankel and Olitzki [1] claimed that specific antibodies can be adsorbed on kaoline and then extracted from the washed clay with 2 per cent glycocoll in varying concentrations of sodium chloride. For the extraction of antitoxins, from 1 to 2 per cent sodium chloride was used. For agglutinins and lysins, from 0.2 to 0.8 per cent salt solution gave the best results. The extracts were free from proteins by ordinary colorimetric tests. The authors [2] subsequently studied the possible protein content of these extracts by anaphylactic tests and currently report that injection of as much as 3 cc. of the "eluate" into guinea-pigs fails to sensitize either to the extract itself or to the full antiserum from which it was derived. Before this result is applied clinically, serolo-

1. Frankel, Max; and Olitzki, Leo: Nature **126**: 723, 1930.
2. Olitzki, Leo; and Frankel, Max: Proc. Soc. Exper. Biol. & Med. **28**: 492 (Feb.) 1931.

gists must take into account the limitation of the anaphylactic test. Proof of nonantigenicity with one animal species is not proof of nonreactivity for other species, nor is the absence of sensitizing power proof of nonprotein nature. Many proteins are known to be nonantigenic for certain animal species. Moreover, denaturizations of serum proteins with glycocoll and hypertonic salt solutions, the inhibition of sensitization by their concurrent injection, or failure of sensitivity to develop as early as the sixteenth day might conceivably vitiate the author's conclusion. Those interested in therapeutic research, however, could well afford to finance two years' disinterested immunochemical work with this suggestive new lead, a study that should precede commercial exploitation.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts at 10 a. m. on Monday and 10:30 a. m. on Saturday, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week is as follows:

September 21. Are Modern Parents Failures?
September 26. Tonsils and Adenoids.

Five minute health talks may be heard over the Columbia Broadcasting System on Monday, Wednesday, Thursday and Saturday, from 1 to 1:05 p. m., Chicago daylight saving time.

The program for the week is as follows:

September 21. What and How Do You Eat?
September 23. Can You Breathe Through Your Nose?
September 24. Walking.
September 26. But He Must Go to School.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Relapsing Fever Made Reportable.—The California Department of Public Health, July 11, passed a resolution declaring relapsing fever (spirillum fever) a reportable disease. It has been known since 1921 that sporadic relapsing fever is indigenous along the eastern border of California and in Nevada. Cases were reported during 1930 in the vicinity of Polaris, Nev., one from a place 80 miles south of Reno, and other cases originated in the mountain regions of southern California. During June and July of this year, spiral organisms were seen in four blood preparations made from patients who had camped in widely separated areas of the eastern California mountain ranges at an altitude above 5,000 feet.

Reaction of Negroes to Disease.—A study recently completed by Samuel J. Holmes, Ph.D., professor of zoology, University of California, shows that Negroes react differently from white persons to several kinds of diseases. Were it not for intermixture of the races this difference would be even more striking. The investigation was made to determine whether the higher death rate among Negroes is due solely to ignorance and unfavorable surroundings or whether there is an actual racial difference in susceptibility to disease. It was found from government records and those of the army and insurance companies that the Negro seems to be more susceptible to tuberculosis, pneumonia and other respiratory infections, but more resistant to such diseases as scarlet fever, erysipelas, diphtheria, diabetes, appendicitis and diseases of the liver. It was pointed out that the mortality of the Negro is so greatly affected by his unfavorable environment and habits of life that for most diseases it is quite impossible to detect any influence of hereditary racial factors that may be present.

COLORADO

Survey of Psychiatric Teaching.—Dr. Franklin G. Ebaugh, professor of psychiatry, University of Colorado School of Medicine, Denver, and director of the Colorado Psychopathic Hospital, has been granted a year's leave of absence, effective September 15, to engage in the activities of the newly created division of psychiatric education of the National Committee for Mental Hygiene. He will make a survey of psychiatric teaching in each of the medical schools. Dr. George S. Johnson, assistant director of the Colorado Psychopathic Hospital, will be acting director during Dr. Ebaugh's absence.

Society News.—Drs. Henry H. Dixon and William Bernard Yegge, Denver, addressed the Northwestern Colorado Medical Society at Hayden, July 23, on "Mental Hygiene in Children of the Preschool Age" and "Pathologic Conditions of the Liver and Gallbladder."——The following clinical case reports were presented before the Boulder County Medical Society, Boulder, September 10: Drs. John Andrew, Longmont, "Acute Yellow Atrophy of the Liver"; Oscar M. Gilbert and Walter K. Reed, "Toxic Adenomatous Goiter with Goiter Heart"; Claude D. Bonham, "Chronic Leukemia," and Carbon Gillaspie, "Multiple Neuritis."

GEORGIA

Teaching Privileges Extended.—At a meeting, August 15, plans were approved which provide that students at Emory University School of Medicine, Atlanta, will be accepted for teaching in the white unit of Grady Memorial Hospital. Heretofore only the colored division of the hospital was used for teaching purposes. Under the plan agreed on, the school of medicine is to appoint certain visiting members of the staff of the white unit, together with one of their associates, to positions in the faculty of the school of medicine; they will receive students from the school for instruction in the wards of the white unit. Medical control and supervision will remain in the white staff under the direction of the board of trustees, as heretofore, and all teaching will be done by members of the white unit staff. There will be no change in management.

State Board Replaced by Department of Public Health.—A law has been enacted in Georgia which greatly reduces the number of state boards and bureaus and purports to simplify the administration of the state government. Among other things, it abolishes the state board of health and the office of state registrar of vital statistics, and transfers their powers, duties and functions to a newly created department of public health. The management and control of the department is vested in a director, to be appointed for a four year term by the governor, from a list of practicing physicians submitted by the Medical Association of Georgia or from the list of officers of the U. S. Public Health Service. The director may appoint from five to ten persons to serve at his pleasure on an advisory board of health. A majority of this board must be physicians, and at least one member must be a dentist. The first director of the department is to be the present secretary of the state board of health, who is to serve until Jan. 1, 1936.

ILLINOIS

License Revoked.—The license of Dr. Joseph P. Moran, DePue, to practice medicine in Illinois was revoked by the state department of registration and education, August 29, following his conviction on a charge of having performed an illegal operation.

Suicides in 1930.—The highest suicide rate ever recorded in Illinois was established in 1930, when 100 more deaths than the previous high rate were noted, making a total of 1,382. The rate per hundred thousand of population was 18 against a previous high rate of 16.4. There were 1,085 suicides last year among men and 297 among women. Considering age, the greatest volume of increase took place among people in the age group 35-44, the number having been 33 per cent greater in 1930 than in 1929.

Chicago

Course for Nurses.—The curriculum for the school of nursing to be conducted at the Municipal Tuberculosis Sanitarium has been announced. The school, which has been divided into twenty-seven periods, will begin on or about October 15 and continue for three months. The work will begin with the history of tuberculosis, continue with study of the various stages, and conclude with instruction in home treatment.

KENTUCKY

Society News.—A symposium on diabetes will be conducted by Drs. Frederick G. Speidel, Armand E. Cohen, Arthur T. Hurst and Michael J. Henry before the Jefferson County Medical Society, Louisville, September 21.

County Health Officers Appointed.—Sixteen counties have recently established full time health units with the aid of the appropriation made by the last congress for use by the U. S. Public Health Service in the states affected by the drought of 1930. Health officers have been appointed in these counties as follows: Drs. Charles W. Holland, Scottsville, to Allen County; Aubrey Young Covington, Paducah, to Caldwell County; Nathaniel Allen Mercer, Columbia, to Casey County; Jacob Leland Tanner, Albany, to Clinton County; Robert F. Porter, Caneyville, to Grayson County; Agnes C. Locke, Greensburg, to Green County; Robert W. Ball, Cynthiana, to Harrison County; Charlie P. Shields, Bloomsfield, to Hart County; Charles D. Cawood, Barbourville, to Knox County; George S. Brock, London, to Laurel County; Frederick W. Wilt, Hazard, to McCreary County; Leslie Turner Bolton, Brandenburg, to Meade County; John H. Chrisman, Owenton, to Owen County; Walker Owens, Mount Vernon, to Rockcastle County, and Clinton B. Walker, Bedford, to Trimble County; Ernest M. Ewers, formerly of Haiju, Chosen, Asia, to Pulaski County.

MASSACHUSETTS

Licenses Revoked and Suspended.—The *New England Journal of Medicine* says that the state board of registration in medicine, August 20, voted to revoke the license of Dr. George Warren Eastman, Lynn, on the charge of conviction in court of having performed an abortion. The license of Dr. Charles Damsky, Lynn, was suspended for one month, on the charge of false testimony in court concerning the school from which he received his degree of medicine. It was also decided at this meeting to restore the license of Dr. Edward J. Flaherty, Maynard, effective September 1, and place him on probation.

Advisory Board for Norfolk Prison Colony.—The appointment of an advisory medical or hygiene board for the new prison colony in Norfolk was recently announced. The committee members are Dr. William Irving Clark, Jr., Worcester, chairman; Dr. David L. Edsall, dean of the Harvard University Medical School, Boston; Edwin B. Wilson, Ph.D., professor of vital statistics, Harvard School of Public Health, Boston; Dr. Hilbert F. Day, professor of clinical surgery at Tufts College Medical School, and Elton Mayo, M.A., professor of industrial research, Harvard University, Cambridge. The committee hopes to work out a program to cover the medical needs of prisoners and plan special public health courses for the prison medical officers. One of their immediate problems is the building and equipping of a $250,000 hospital, which has been made possible under Governor Ely's emergency construction program. The development of the committee's program is made possible by a grant from the Bureau of Social Hygiene in New York for the medical, educational, industrial and social work with individual prisoners. Dr. Day is at present acting as a link between the committee and the prison and as surgical consultant to Norfolk Prison Colony. It is planned to appoint a consulting staff to cover various fields of medical activity.

MICHIGAN

Centennial of County Society.—The Oakland County Medical Society will observe the one hundredth anniversary of its founding during the annual meeting of the state medical society at Pontiac, September 22-24. A celebration in the form of a health exposition will be held in the First Presbyterian Church. Sunday, September 20, a public church service will be held in the Baptist Tabernacle, at which time plans for a memorial to those physicians and surgeons who have formerly practiced in Oakland County will be discussed. Dr. Morris Fishbein, editor of THE JOURNAL, will address the meeting, September 24, on "Frontiers of Medicine."

Emergency Plan for Obstetric Service.—At a meeting of the advisory council of the Wayne County Medical Society, August 28, a plan for obstetric service which was recently offered to the society by the city welfare commission was accepted. The plan, which is said to be an economy measure, proposes to call in private physicians to care for maternity patients at home at a fee of $10, which will be paid by the city. Under the system previously used, the city physician, Dr. Frank J. Kilroy, and his staff cared for these maternity patients. It was reported that there are annually about 2,500 more cases than they can handle, and in the last few years it has been Dr. Kilroy's custom to send these patients to hospitals to receive care for which the city has been paying $3.50 a day. The average cost of a baby to the city under this plan was $67, it was said. The new arrangement will thus save the city $57 on each case. According to a resolution adopted at the meeting, the acceptance is for the period of the present emergency. Those who opposed adoption of the plan charged that it would lower the standards of obstetric work in Detroit and increase infant mortality. The medical society sent copies of the welfare commission's offer to its members for their opinions; 200 of the replies favored adoption of the plan, it was said.

MINNESOTA

Society News.—Dr. Charles C. Allen, Austin, was elected president of the Southern Minnesota Medical Association at its annual meeting, August 24, and Dr. Monte C. Piper, Rochester, secretary. Medals for exhibits were awarded to Drs. Ralph K. Ghormley and associates of Rochester, and William P. Herbst, Jr., Minneapolis.——Dr. Jay Arthur Myers, Minneapolis, addressed the Becker-Clay Counties Medical Society, August 14, on the Mantoux skin test for tuberculosis; Dr. Edward A. Meyerding, Minneapolis, also addressed the meeting.

Itinerant Doran Sentenced.—Dr. John E. Doran entered a plea of guilty to practicing medicine as an itinerant physician without a license at Albert Lea, August 21, and was sentenced to six months in the county jail, the state board of medical examiners reports. The judge suspended the sentence on condition that Dr. Doran is to refrain absolutely from practicing medicine in Minnesota in more than one town. Doran has been fined several times for the same offense (THE JOURNAL, Dec. 13, 1930, p. 1843). In 1930 he was fined $500 and ordered to pay a $1,000 license fee at Watertown, S. D. In July, 1924, Doran's Colorado license is said to have been revoked after he had been found guilty of unprofessional and dishonorable conduct. He appealed the decision, but the district court upheld the action of the state board. For several years, Dr. Doran has been traveling about Minnesota, maintaining offices temporarily in hotels, where he received patients after having advertised in the local newspapers his contemplated visit to the community. Among the towns where he maintained an office are Mankato, Wino, St. Cloud, Canby and Albert Lea.

NEW YORK

Society News.—Dr. Wardner D. Ayer, Syracuse, addressed the Tompkins County Medical Society, Ithaca, August 13, at a special meeting called to discuss poliomyelitis.——Dr. Leo Mayer, New York, addressed a special meeting of the Saranac Lake Medical Society, August 26, on "Bone and Joint Tuberculosis in Children."

Personal.—Dr. Norman C. Lyster, Plattsburg, has been selected as health officer for the district comprising the towns of German, McDonough, Pharsalia, Preston and Smithville in Chenango County, succeeding the late Dr. George S. Weaver.——Dr. Watson H. Harwood, Chasm Falls, was the guest of honor at a dinner, August 25, celebrating his fiftieth year of medical practice.——Dr. Ralph P. Folsom, New York, has been appointed superintendent of the Hudson River State Hospital, Poughkeepsie, to succeed Dr. Clarence O. Cheney, who has recently become director of the Psychiatric Institute at the Columbia Medical Center in New York. Dr. Folsom was graduated from the College of Physicians and Surgeons, Columbia University, in 1908 and has served continuously since that time in various capacities on the staff of the Manhattan State Hospital, with the exception of a period of service at the Central Islip State Hospital.

New York City

Society News.—Plans for a six-story, $300,000 addition to its building at Fifth Avenue and One Hundred and Third Street have been announced by the New York Academy of Medicine. The rear of the building will also be raised to six stories. The annex will house the academy's library and administrative offices.——Sections on physical therapy and on pathology have been formed recently by the Medical Society of the County of Kings.

After-Care for Poliomyelitis Victims.—A clearing house service for the supervision of after-care for children who have had poliomyelitis in the present epidemic has been instituted by the Children's Welfare Federation. With the approval of the commissioners of health and hospitals, all hospitals discharging patients who have had infantile paralysis are asked to report cases to the federation, which has undertaken to see that all children have proper after-care. In each borough, nursing organizations are reported to have assumed the responsibility of giving treatments under a physician's direction, con-

necting patients with orthopedic clinics when necessary and providing braces and transportation for those who need them. The federation has prepared up-to-date information on clinics in each district. Health department nurses will check on cases not registered with the federation. The Medical Society of the County of New York held a special meeting, September 18, at the New York Academy of Medicine to discuss the problem of after-care. Among those who took part in the discussion were Drs. Shirley W. Wynne, health commissioner, George Draper, Emanuel D. Friedman, Charlton Wallace, Armitage Whitman, Louis C. Schroeder and Richard Kovacs, all of New York, and William Lloyd Aycock of the Harvard Infantile Paralysis Commission, Boston. The Medical Society of the County of Kings also held a meeting, September 15, at which Drs. James P. Leake, U. S. Public Health Service, Washington, D. C., Jaques C. Rushmore and Irving J. Sands, Brooklyn, spoke on various aspects of the disease. The epidemic is now considered to be definitely waning and has followed closely the trend predicted by the health department by means of charts based on a comparison with the epidemic of 1916. Up to September 12 there had been 3,214 cases since July 1, and up to September 5, 332 deaths. During the week ended September 12, the number of cases was 254, compared with 347 the preceding week. The death rate in the present outbreak is 12.39 per cent, compared with 27 per cent in the 1916 epidemic.

Commission to Study Loose Milk Problem.—The appointment of a Loose Milk Commission to study the possible health menace in the sale of loose milk was announced, September 8, by Dr. Shirley W. Wynne, city health commissioner. This action was the indirect result, it is reported, of a statement published in the press that more than 90 per cent of eighty-seven samples of loose milk and cream purchased over the counter in Manhattan, Brooklyn and the Bronx contained evidence of *Bacillus coli* when tested in quantities of 1 cc. Dr. Wynne is reported to have said that the past surveys of loose milk by the department would not indicate such a high percentage of cases of *B. coli*, and that the health department statistics showed that there had been no milk-borne epidemic in the city in more than fifteen years. It was pointed out that it would be necessary to amend the sanitary code to prohibit the sale of loose milk, but that its distribution from wagons had already been forbidden. Members of the Loose Milk Commission, the chairman of which will be Edward F. Brown, director of the Diphtheria Prevention and Noise Abatement commissions, are:

Dr. Milton J. Rosenau, Charles Wilder professor of preventive medicine and hygiene, Harvard University Medical School, Boston.
Elmer V. McCollum, Sc.D., professor of biochemistry, Johns Hopkins School of Hygiene and Public Health, Baltimore.
Dr. Paul B. Brooks, Albany, of the state department of health.
Dr. Simon Flexner, New York, director of the Rockefeller Institute.
Miss Lillian D. Wald, head worker of Henry Street Settlement.
Charles C. Burlingham of the Welfare Council of New York City.
Dr. Philip Van Ingen, director of the Association for Improving the Condition of the Poor.
Howard S. Cullman, chairman of the board of Beekman Street Hospital.
Patrick D. Fox, president of the New York Milk Conference Board.
Dr. Henry Dwight Chapin, emeritus professor of pediatrics, New York Post-Graduate Medical School and Hospital.
C. W. Holliday, secretary, Sheffield Producers Association.

A representative of the U. S. Public Health Service will also serve on the commission, it is reported. The New York Milk Conference Board voted to cooperate with the health department and promised to attempt to lower the price of bottled milk if the sale of loose milk should be banned. The newly appointed commission, which was to have held its organization meeting, September 11, will submit a report on or before October 15. It was stated that, if the commission finds loose milk a health menace, the board will ban its sale except for manufacturing. It was pointed out that at present bacteriologic tests are not made after the loose milk reaches the retail dispenser, but inspectors watch the general sanitary conditions in its handling and any possible adulteration.

OREGON

State Medical Meeting at Eugene, October 22-24.—The fifty-seventh annual session of the Oregon State Medical Society will be held at Eugene, October 22-24, under the presidency of Dr. Thomas E. Griffith, The Dalles, with headquarters at the Chamber of Commerce. Guest speakers will be Drs. Alfred C. Reed, San Francisco, on "Clinical Amebiasis and Newer Methods of Treatment"; Hans Lisser, San Francisco, "Recent Discoveries in Endocrinology and Their Clinical Application"; Henry H. Dixon, Denver, "Some Phases of Preventive Psychiatry," and James Tate Mason, Seattle, "Conservation in Gallbladder Surgery." Dr. Reed will address a public meeting Thursday evening, October 22, on "Health Lessons from the Orient." The fourth annual medical golf tournament will be held Thursday afternoon, and the annual banquet Friday evening. The Oregon Public Health League will hold its annual luncheon meeting Friday with Senator Joel C. Booth, Lebanon, as the speaker on "The Basic Science Act." On Saturday night there will be a "stunt dinner," with awarding of golf prizes, after which members are invited to attend a night football game between University of Oregon and Oregon State College freshmen.

SOUTH CAROLINA

Personal.—Dr. Robert Wilson, Charleston, has resigned the chairmanship of the state board of health after thirty years' service. He was succeeded by Dr. William Egleston, Hartsville.

TENNESSEE

Society News.—Dr. John C. Burch addressed the Nashville Academy of Medicine, September 8, on "Endometrial Hyperplasia." Dr. Samuel C. Cowan addressed the academy, September 15, on prenatal care.——The Knox County Medical Society was addressed, September 8, by Dr. Samuel Joseph Platt, Knoxville, on sprue.

Health at Memphis.—Telegraphic reports to the U. S. Department of Commerce from eighty-two cities with a population of 36 million, for the week ended September 5, indicate that the highest mortality rate (17.5) appeared for Memphis and the rate for the group of cities as a whole, 9.8. The mortality rate for Memphis for the corresponding period last year was 12.1 and for the group of cities, 10.2. The annual rate for eighty-two cities for the thirty-six weeks of 1931 was 12.3 as against a rate of 12.2 for the corresponding weeks of 1930. Caution should be used in the interpretation of weekly figures as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have large Negro populations may tend to increase the death rate.

VIRGINIA

Personal.—Dr. John M. Nokes, formerly of Nashville, Tenn., has been appointed assistant professor of obstetrics and gynecology at the University of Virginia Medical School.——Dr. Edwin L. McQuade, formerly of Baltimore, was recently selected as chief health officer of Charlottesville and Albemarle County, succeeding Dr. George B. Young, resigned.

Society News.—Dr. John A. Gibson, Leesburg, addressed the Fauquier County Medical Society, Haymarket, June 25, on control of midwives by the state board of health.——The Southwestern Virginia Medical Society will hold its semiannual meeting at Marion, September 24-25. The program will consist of papers by Drs. Horton R. Casparis, Nashville, Tenn., on "Allergy in Children"; Isaac A. Bigger, Richmond, "Infections of the Hand and Forearm"; Thomas N. Spessard, Roanoke, "General and Focal Signs of Intracranial Tumors"; John C. King, Radford, "Prognosis in Psychiatric Cases"; Francis H. Smith, Abingdon, "Coronary Disease as a Factor in Failing Myocardium," and George B. Lawson, Roanoke, and James Glenn Cox, Hillsville, subjects unannounced. The presidential address will be given by Dr. Elbyrne G. Gill, Roanoke.——A symposium on vascular hypertension will feature the semiannual meeting of the Clinch Valley Medical Society, September 26, at Gate City.

State Medical Meeting at Roanoke, October 6-8.—The sixty-second annual meeting of the Medical Society of Virginia will be held at Roanoke, October 6-8, with headquarters at the Patrick Henry Hotel, and under the presidency of Dr. James Allison Hodges, Richmond. The preliminary program includes papers by Drs. Russell L. Cecil, New York, on "Classification and Treatment of Chronic Arthritis"; Bittle O. Keister, Washington, D. C., "The Old Family Physician Fast Coming Back Into His Own, as in Former Days"; Buckner M. Randolph, Charlottesville, "Relation of Infection During Early Life to Subsequent Mental Disorders"; Warren F. Draper, state health officer, "Interrelationships of Preventive and Curative Medicine"; Claude Moore, Washington, D. C., "Radiotherapy of Nonmalignant Conditions"; William B. Porter, Richmond, "Angina Pectoris Associated with Pernicious Anemia"; James Warren Sayre, Newport News, "Subphrenic Abscess as a Postoperative Complication in Abdominal Surgery"; John Shelton Horsley, Richmond, "Vaginal Hysterectomy for Cancer of the Body of the Uterus," and Charles B. Pritchett, Hopewell, "Chronic Gonorrhea as a Clinical Entity." A symposium on mental hygiene will be held Wednesday; among those assisting will be Dr. Ralph C. P. Truitt, Baltimore. Entertainment will include a golf tournament, trap shoot, luncheon, reception and grand ball.

WASHINGTON

Society News.—Dr. Howard B. Kellogg, Maywood, Ill., and William F. Windle, Ph.D., Chicago, presented motion pictures with sound of "Anatomy of Female Pelvis and Perineum" before the King County Medical Society, September 14; Dr. Harold O. Jones, Chicago, demonstrated talking pictures on "Subtotal Abdominal Hysterectomy for Uterine Fibroids."

Another Impostor.—Washington physicians are warned not to pay any money to one H. H. Harvey, who poses as a representative of the W. F. Prior Company, publishers of Hagerstown, Md. It has been reported to this firm that physicians of Yakima, Arlington and Seattle have recently been swindled of amounts varying from $10 to $15. The man is said to use sometimes the name H. L. Carey as an alias.

WEST VIRGINIA

Society News.—Dr. Joseph Colt Bloodgood, Baltimore, will be among the speakers at the meeting of the Hospital Association of West Virginia, Huntington, September 21, on the work of hospitals in the study of cancer.——Dr. Emmett H. Terrell, Richmond, addressed the Kanawha County Medical Society, Charleston, September 1, on "Etiology, Pathology and Treatment of Hemorrhoids."——Dr. Russell H. Paden, Charleston, addressed the Logan County Medical Society, Logan, July 29, on prenatal instruction.

GENERAL

Society News.—The International Assembly of the Inter-State Postgraduate Medical Association of North America will be held at Milwaukee, October 19-23, with headquarters at the Hotel Schroeder. In addition to an extensive program to be presented by American and Canadian physicians, the following foreign guests are listed: Mr. Adams A. McConnell, Dublin, Ireland; Mr. A. Lawrence, London, England; Sir Thomas J. Horder, London, and Dr. Thierry de Martel, Paris, France.

American Roentgen Ray Society.—The thirty-second annual meeting of the American Roentgen Ray Society will be held at Atlantic City, September 22-25. Three foreign guests will address the society: Dr. Henri Coutard, Paris, on "Roentgen Therapy of the Epitheliomas of the Tonsil, Larynx and Hypopharynx, 1920-1926"; Dr. Elis G. E. Berven, Stockholm, on "Development of Technic and Results in the Treatment of Tumors in the Nasal and Oral Cavities"; Prof. Dr. Fedor Haenisch, Hamburg, will deliver the Caldwell Lecture, Tuesday evening, September 22. Among other speakers announced are Drs. Willis F. Manges, Philadelphia, on "Primary Carcinoma of the Lung—Roentgen Ray Diagnosis and Preliminary Report on Roentgen Therapy"; Douglas Quick, New York, "Principles and Methods Employed in the Treatment of Intra-Oral Epidermoid Carcinoma"; Kenneth R. McAlpin and Ross Golden, New York, "Roentgen Management of Lymphoblastoma (Hodgkin's Disease)"; Charles L. Martin, Dallas, Texas, "Radon Seeds Versus Small Radium Needles"; Ursus V. Portmann, Cleveland, "X-Ray Therapy for Some Tumors of the Genito-Urinary Tract" and Byrl R. Kirklin and C. M. Moore, Rochester, Minn., "Benign Giant Cell Tumors."

CANADA

Society News.—Drs. Frederick H. MacKay and Cecil C. Birchard, Montreal, addressed a joint meeting of the Vancouver Medical Association and the British Columbia Medical Association, Vancouver, September 9, on "Poliomyelitis" and "Cardiac Signs and Symptoms," respectively.

Hospital News.—The province of Alberta held its first hospital day, June 19, as a means of increasing public interest in hospital maintenance. This date was selected in honor of Jeanne Mance, who in 1642 came to Montreal to found a hospital in the wilderness. It is hoped that other hospitals will accept this date and that it may become a national hospital day.

FOREIGN

Course on Dermatology.—A two weeks' course in dermatology will be offered by the Faculty of Medicine, University of Paris, January 18-30, 1932, under the direction of Professor Sézary at the Hôpital Saint-Louis. Lectures will be given every day, and three times each week there will be demonstrations of minor surgery and the use of physical agents in the treatment of skin disorders.

Society News.—Dr. William H. Welch, professor of the history of medicine, Johns Hopkins University School of Medicine, Baltimore, and John Masefield, poet laureate of Great Britain, gave the principal addresses at a celebration, August 20, at Ross Institute in Putney, London, marking the thirty-fourth anniversary of the discovery by Sir Ronald Ross of the transmission of malaria by the anopheles mosquito.

CORRECTION

New York Physical Therapy Society.—In a footnote (THE JOURNAL, July 25, p. 235) it was stated that the paper by Dr. Clay Ray Murray on the "Proper Place of Physical Therapy in the Treatment of Fractures," was read before the New York Physiotherapy Society. This should have been the New York Physical Therapy Society, which is an association of physicians and surgeons. The New York Physiotherapy Society is a group of technicians.

Government Services

U. S. Public Health Service

A. A. Surg. Rexel Goodman, relieved at marine hospital, Cleveland, about August 8, and assigned to duty at marine hospital, Mobile, Ala.; Asst. Surg. Paul A. Neal, Jr., relieved at Copenhagen, Denmark, about September 1, and assigned to duty at Palermo, Italy; P. A. Surg. Houston G. Foster, relieved at Windsor, Canada, and assigned to duty at the U. S. Marine Hospital, Portland, Maine; Asst. Surg. John L. Wilson, relieved at Norfolk, Va., and assigned to duty at U. S. Marine Hospital, Boston; Surg. Joseph Bolten, relieved at Louisville, and assigned as medical officer in charge of U. S. Marine Hospital, Galveston, Texas; Surg. David J. Prather, relieved at Havana, Cuba, and directed to proceed to St. Louis, and assume charge of the U. S. Marine Hospital at that place; Surg. Howard F. Smith, relieved at Mexico City, and assigned to duty at the American Consulate, Havana; Surg. James E. Faris, relieved at Ellis Island, and assigned to duty with Office of Indian Affairs, department of the interior, Washington, D. C.; Asst. Surg. Gilbert L. Dunnahoo, relieved at Rosebank, S. I., N. Y., and assigned to duty at the National Institute of Health, Washington, D. C.; A. A. Surg. John R. Heller, Jr., relieved at Brunswick, Ga., and assigned to duty at the Venereal Disease Clinic at Hot Springs, Ark.; P. A. Surg. Richard B. Holt, relieved at Stuttgart, Germany, and assigned at Stockholm, Sweden; P. A. Surg. Ralph B. Smavely, relieved at Liverpool, England, and assigned at American Consulate, Stuttgart; Asst. Surg. Edwin G. Williams, relieved at Cologne, Germany, and assigned at American Consulate, Liverpool; Asst. Surg. R. C. Arnold, relieved at marine hospital, Pittsburgh, and assigned at marine hospital, New Orleans; Asst. Surg. Waldemar J. A. Wickman, relieved at marine hospital, Norfolk, Va., and assigned at marine hospital, Pittsburgh, where Asst. Surg. Roscoe C. Kash has been relieved and assigned at marine hospital, New Orleans; P. A. Surg. Gregory J. Van Beeck, relieved at Stockholm, Sweden, and assigned at the American Consulate, Genoa, Italy.

Army Personals

Major James N. Williams, relieved at Washington, D. C., and assigned to duty in El Paso, Texas; Lieut. Joseph H. McNinch, relieved at Fort Sam Houston, Texas, and will report to the commanding officer, Army and Navy General Hospital, Hot Springs National Park, Ark., for duty; Major Edward A. Coates, Jr., relieved at Fort Bragg, North Carolina, about September 15, and ordered to Fort Monroe, Virginia, for duty; Major Montreville A. St. Peter, relieved at Fort Omaha, Nebraska, and will sail from New York about December 8, for duty in the Hawaiian department; Col. Percy L. Jones, on his own application, is retired from active service, effective October 31, after more than thirty-two years' service; Major Carlton L. Vanderboget, relieved at the Panama Canal, C. Z., and on completion of present tour of foreign service, is assigned to duty at Fort Lewis, Washington; Capt. Howard S. McConkie, relieved at Fort Omaha, Nebraska, will sail from New York for duty in the Panama Canal Department.

Catalogue of Parasites

A catalogue of the parasites of men and animals, indexed in the most important modern languages and in Latin, has been finished at the National Institute of Health, Washington, D. C., and will be published shortly in a complete edition of several volumes, 5,300 pages in all. The catalogue was begun by Dr. Charles Wardell Stiles, chief of the division of zoology at the institute, in 1888, when he was a student at Leipzig, Germany. Cooper Curtice, formerly of the Bureau of Animal Industry, started a similar catalogue at the same time, unknown to Dr. Stiles. After Curtice's resignation, Albert Hassall, zoologist, of the same bureau, took up the work in collaboration

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with Dr. Stiles. It was estimated that the catalogue would save at least 25 per cent of the time now used by research workers in hunting information on medical and zoological subjects. Dr. Stiles has been connected with the U. S. Public Health Service since 1902.

Dr. Cullen Succeeds Dr. Durrett as Drug Control Chief

Dr. James J. Durrett, chief of drug control of the Food and Drug Administration since 1928, has resigned to become associated with E. R. Squibb and Sons of New York and Dr. Frederick J. Cullen, chief medical officer of the administration, has been appointed to succeed him. Dr. Cullen, a native of Indiana, was graduated from the University of Colorado School of Medicine in 1913. He joined the Food and Drug Administration as associate medical officer in 1929 after nine years of general medical practice and several years' service in the U. S. Army Medical Corps, including service with the Third Division, American Expeditionary Forces, in France.

Rear Admiral Stitt Retires

Rear Admiral Edward Rhodes Stitt, former surgeon general of the U. S. Navy, was retired, August 1, having reached the retirement age. Admiral Stitt, a native of North Carolina, was graduated from the University of Pennsylvania School of Medicine in 1889 and from the London School of Tropical Medicine in 1905. For several years he was head of the department of tropical medicine and director of laboratories of the Naval Medical School, Washington, D. C., and was commanding officer of the school from 1916 to 1920. In the latter year he was appointed surgeon general of the navy and served two four-year terms. From 1928 until retirement he was inspector of medical department activities in the San Diego naval district. In addition to his service activities, Admiral Stitt has at various times served as president of the National Board of Medical Examiners; professor of tropical medicine at George Washington University and Georgetown University, Washington, D. C.; lecturer in tropical medicine, Jefferson Medical College, Philadelphia, and associate professor of medical zoology, University of the Philippines. He has received several honorary degrees and is the author of two books on tropical medicine.

Change of Station in the Navy

Lieut. Comdr. Melville J. Aston from the naval hospital, League Island, Philadelphia, to the U. S. S. *Chaumont;* Lieut. Roy W. Hayworth from Public Health Service of Haiti to naval hospital, Washington, D. C.; Lieut. Comdr. John H. Chambers from Public Health Service of Haiti to the naval hospital, League Island, Philadelphia; Lieut. Comdr. Elphege A. M. Gendreau from Public Health Service of Haiti to recruiting station, Hampton Roads, Va.; Lieut. Comdr. Guy B. McArthur from Public Health Service of Haiti to naval hospital, New York; Lieut. Comdr. John L. Shipley from Public Health Service of Haiti to recruiting station, Hampton Roads, Va., and Lieut. Oliver R. Nees from naval dispensary, San Diego, Calif., to naval hospital, Pearl Harbor, T. H.; Lieut. Comdr. Abraham Jablons (R) has been ordered to active duty at headquarters of the Third Naval District, New York.

Veterans' Relief Agencies Are Merged

Reorganization of the United States Veterans' Bureau, the Bureau of Pensions and the Bureau of National Homes into a consolidated agency known as the Veterans' Relief Administration is announced. The merger, which was authorized in the act of July 3, 1930, was consummated July 1, when the first appropriations became available. Gen. Frank T. Hines, head of the Veterans' Bureau, is in charge of the new organization with the title "Administrator of Veterans' Affairs."

Examinations for the Public Health Service

Examination of candidates for commission as assistant surgeon in the regular corps of the U. S. Public Health Service will be held, November 2, in Washington, D. C., Chicago, New Orleans and San Francisco. Candidates must be at least 23 and not more than 32 years old. They must have graduated from a reputable medical school and must have had one year's hospital experience or two years' practice of medicine. They must pass oral, written and clinical tests and undergo a physical examination.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 22, 1931.

Cost of Medical Socialism Creates a Grave Position

In the house of commons Sir Kingsley Wood (formerly parliamentary secretary to the ministry of health) drew attention to a disturbing aspect of national health insurance. A total of some $175,000,000 was paid out last year, of which medical benefit cost $43,500,000. Of the last sum, insurance physicians received $31,000,000 and pharmacists $10,000,000. In spite of the progress of medical science and the fall in the death rate, the claims of insured persons for sickness had much increased. The claims of married women for disablement benefit had risen by 100 per cent and of unmarried women by 159 per cent. In the discussion a physician, Dr. Morris Jones, pointed out that from many years' experience he knew that when a woman was certified as unfit to work in the occupation under which she was insured she was often engaged in household work that was just as arduous. This was responsible for a great deal of leakage. He suggested that no insurance certificate should be accepted for such a thing as a cold or a chill.

Mr. Greenwood (minister of health) said that there was not the slightest doubt that there were improper claims, but improved administration was having an effect. In 1930 the expenditure on sickness was $10,000,000 less than in the previous year, though it was possible that the actual sickness in 1930 was lighter. The rapidity with which an insured person could transfer from one panel physician to another had been limited. It has been shown in previous letters that under the panel system the more scrupulous physicians are penalized and the less scrupulous benefited by refusal of certificates, which leads to transference of patients from the former to the latter. So much for medical socialism. But the practice of socialism in general has brought the national finances to such a state that our socialist government, unwilling to incur alone the unpopularity of calling a halt to mounting expenditures that threaten a budgetary deficit, has appointed a committee of all parties to report on national expenditure. Drastic economies that have been recommended would effect a total cut of about $500,000,000. This includes a reduction of $5,000,000 in the cost of national health insurance, which would be partly brought about by reducing the capitation fee of insurance physicians by about 25 cents.

In an address to the Ancient Order of Foresters (one of the great benefit societies) the chief high ranger, Mr. Joseph Roberts, pointed out that the increase of sickness claims was associated with economic stress rather than with real incapacity to work, even after allowing for the effect of unemployment on health. The old lodge system was based on the realization of the physician of the relation between a medical certificate and the resources of the organization by which he was employed. Lack of appreciation of this was partly responsible for the present trouble. Modern legislation was too often undertaken in an orgy of competitive vote catching and had gone far to destroy that sturdy individualism which long distinguished this country. As a result, multitudes had come to regard the state as an organization with limitless funds which could release all citizens from the need of doing anything positive for themselves or their families.

A Blood Test for Cancer

The lay press is full of the doings of Dr. S. G. T. Bendien, a Dutch physician now on a visit to London, who claims that he can diagnose cancer by examination of the blood. Like some other visitors who claim discoveries of great medical importance, Dr. Bendien complains that his work is ignored in his own country. He published a book in May, which was reviewed

unsympathetically by the few Dutch periodicals that noticed it. The title is "Spezifische Veränderung des Blutserums." The first part is a new chemical method of distinguishing normal blood serums from those of certain diseases. The second part is on the examination by the ultraviolet spectrophotometer of non-normal serums, whereby it is claimed that certain differences are specific to certain diseases, of which cancer is one. One thing separates Dr. Bendien from other visitors of the kind: he is not claiming a method of cure but only of diagnosis, and, whatever the result, he appears to be a genuine worker. The British Empire Cancer Campaign, on hearing of his claim, followed its regular procedure and put the matter to the test. In agreement with Dr. Bendien, samples of blood were taken from persons suffering from cancer and other diseases and submitted to him without a diagnosis. He tested twenty-one samples, five from cancerous patients, two from normal persons and fourteen from patients suffering from other diseases. He correctly diagnosed the five specimens from cancerous patients and the two from normal persons. In addition, he diagnosed one of the remainder as cancerous and further investigation proved that he was right. The British Empire Cancer Campaign concludes that the discovery of Dr. Bendien marks a definite advance in cancer research in respect to the aid it brings to diagnosis, but some time must elapse before the full value can be ascertained.

A Great Medical Statistician

The retirement of Dr. T. H. C. Stevenson from the position of medical statistical officer to the registrar general has evoked a tribute in the *Times* from leaders of the profession, such as Lords Moynihan and Dawson, and statisticians, such as Prof. Major Greenwood and Mr. J. C. Stamp. They point out that Dr. Stevenson's contributions to the scientific journals alone would secure for him a permanent place in statistical science. But his illuminating discussions of the problems of vital statistics contributed to the census reports and the annual and decennial reports of the registrar general are landmarks in our national records. His remarkable analysis of the census of fertility, taken in 1911, was a *tour de force*, while his essays contributed to the annual reports have made a wider appeal and place him only second to Farr among those who have secured for England her position in the realm of official vital statistics. His studies of the factors of infant mortality, of the local distribution and evolution of tuberculosis mortality, and of the interpretation of cancer mortality, especially in regard to its local occurrence in the body, are of great importance. He first demonstrated the contrasting rates of mortality of single and of married women from cancer of the breast and the genital organs. This and his more recent studies of the variation of cancer mortality with social status constitute probably the most important statistical contributions yet made to the knowledge of malignant disease. For twenty-two years Dr. Stevenson has been "bookkeeper" of medical statistics. In 1910 he visited America to inspect tabulating machines used there for statistical work. Their value was so apparent that they were immediately adopted in this country for the 1911 census. By the large figures he dealt with, Dr. Stevenson was able to draw conclusions with much greater certainty than was possible for the ordinary physician or even the specialist. Thus he showed that deaths from cancer of the upper food passages were most numerous among the poor and that they decreased as persons became wealthy; also that there was greater mortality from diseases of the thyroid among single than among married women. It was left for specialists to explain these discoveries. The greatest change he has seen in the course of his work is the decline of tuberculosis, which has progressed with the rise in the purchasing power of the people. Another marked change is the decline in the deaths from alcoholism. Still another great change is the decline in infant mortality, which he regards as due to the fall in the birth rate. Scarlet fever, once a dread disease, has ceased to be an important cause of death. This he attributes to a change in the causal organism similar to what has happened in the case of smallpox. Another fact established by him is that more men die of cancer than women, which is contrary to what was supposed. He is about to publish a research showing that the average age at which people die of cancer differs according to the organ attacked. He is retiring at the age of 60 because of a breakdown in health.

Clinical Tests of New Remedies

The Medical Research Council has appointed a therapeutic trials committee as an advisory body in arranging for properly controlled clinical tests of new products that seem likely, on experimental grounds, to have value in the treatment of disease. The committee consists of eminent members of the profession: Prof. T. R. Elliott (chairman), Prof. E. F. Buzzard, Dr. H. H. Dale, F.R.S. (director of the National Institute for Medical Research), Lord Dawson, Prof. A. W. M. Ellis, Sir John Parsons (ophthalmologist), Dr. J. A. Ryle, Sir J. Thomson Walker (urologist), Mr. Wilfred Trotter (surgeon) and Prof. D. F. D. Wilkie (surgeon). Conditions have been the subject of discussion and agreement between the Medical Research Council and the Association of British Chemical Manufacturers, under which the Therapeutic Trials Committee will be prepared to consider applications by commercial firms for the examination of new products, submitted with the available experimental evidence of their value, and will arrange suitable clinical trials in suitable cases. The committee will work in close touch with the existing chemotherapy committee, which is engaged for the Medical Research Council in promoting researches for the discovery and production of new remedies. The Therapeutics Trials Committee will invite experts in particular branches of medicine and surgery to undertake clinical trials of preparations accepted for the purpose. Reports on the results will be published under the authority of the committee. Here at last there will be an authoritative guide to the value of new remedies, and it will not be necessary to depend on the interested and therefore exaggerated claims of manufacturers. The new body seems analogous to the Council on Pharmacy and Chemistry of the American Medical Association.

Who Performed the First Ovariotomy?

It has been generally taught that Ephraim McDowell of Kentucky performed the first ovariotomy, but in an article on Lawson Tait, his former assistant, Mr. Christopher Martin in the current number of the *Birmingham Medical Review* states that McDowell had a predecessor. In May, 1897, Tait published in the *Review* a paper entitled "Was Robert Houston of Glasgow the First Ovariotomist?" In this paper, which should be of especial interest to Americans, Tait maintained that the credit should be given to his countryman Houston, who in 1701, a hundred years before McDowell's operation (1809), deliberately opened the abdomen of Margaret Millar and took away what was evidently a ruptured colloid cyst, removing over 9 quarts of gelatinous fluid. He makes no mention of tying a pedicle; possibly there was none. He kept the lower end of the wound open for five days by means of a small tent, for drainage. The patient recovered. Tait wrote: "Houston's operation was not only an ovariotomy, but a successful one, and the first of the kind on record." But this is a common story in the history of science; priority has been disputed about most discoveries. Thus, if credit is to be given to the first man, the disease which is called in Britain Graves's and on the continent of Europe Basedow's should be called Parson's, for it appears to have been first described by an English physician, James Parsons (1705-1770). Moreover, the eponymous authorities were again anticipated by another English physician, Caleb Parry (1755-1822). However, it is rightly held that the man who makes a discovery and forces it on an unwilling world is entitled to the credit, notwithstanding a predecessor of whom he knows nothing.

PARIS

(From Our Regular Correspondent)

Aug. 5, 1931.

The Medical Convention at Nancy

The annual medical convention organized at Nancy by the Faculté de médecine of that city (les journées médicales) occupied two days. The first day's session was held in the Sédillot military hospital, at which Colonel Spick, of the army medical corps and director of the sanitary service of the twentieth region, spoke on "War Wounds and Their Treatment." Lieut. Col. Ferron gave a presentation of the apparatus used in the sanitary service in fractures, and Professor Parisot discussed lesions resulting from intoxication due to war gases and their treatment. The morning of the second day was taken up with visits to several new clinics associated with the Central Hospital. Each of the department heads gave a talk on some subject on the program. Professor Santenoise gave an account of the research that led to the discovery of a new pancreatic hormone, and explained its rôle in glycoregulation and its value for the treatment of diabetes. This was the most important presentation of this scientific session. For some time, Santenoise had noted the relations existing between hyperexcitability of the vagus nerve and the internal secretion of the pancreas. Vagotonic patients present an increased tolerance for carbohydrates. Removal of the pancreas is followed by the frank diminution of the excitability of the cardiac nerve, confirmed by the stimulability of the oculocardiac reflex—but only when the organ has been removed in toto. Blood from the pancreatic vein of animals restores vagotonia in depancreatized animals. The same effects are produced with certain pancreatic extracts but disappeared when Santenoise used an extremely purified insulin. After long research, he succeeded in isolating from the pancreas a new hormone (absolutely distinct from insulin) which is an excitant of the vagus nerve. Like insulin, it also produces hypoglycemia but in a slower and much more prolonged manner. But it does not produce hypoglycemia in animals the vagus nerves of which have been severed or inhibited by atropine. It is through the mediation of the vagus nerve that this particular hormone acts on glycemia. But whereas insulin deprives the liver of glycogen, this hormone increases the supply of glycogen in the liver. From the therapeutic point of view, Santenoise concludes that there is reason to combine in diabetic patients the use of this hormone with that of insulin. The disappearance of glycosuria is much more enduring, which makes it possible to diminish considerably the number of injections. On the other hand, the tolerance for carbohydrates is much increased, which authorizes the imposition of a much less severe diet on the patient. Their general condition improves therefore rapidly and their weight increases.

Influence of the Emotions on Production of Cancer

Before the general assembly of the Ligue contre le cancer, Professor Forgue of Montpellier delivered an interesting address on the rôle of emotional factors in the etiology of cancer. As far back as Ambroise Paré in the sixteenth century such ideas were advanced; but Chomel and Bouveret in the nineteenth century were the first to formulate them clearly. After the war, it was observed that cases of cancer increased 30 per cent in women who lost their husband or son—chiefly cancers of the digestive tract. Forgue believes in this influence and thinks that the mechanism lies in a disequilibrium of the nervous system, primarily of a psychic but secondarily of a sympathetic order, which thereby becomes somewhat lax in fulfilling its rôle as regulator of cellular development and of the resistance of the cells to infectious elements, such as the supposed invisible virus of cancer, or to continuous irritations such as exist in cancer succeeding scars. Furthermore, the rôle of the nervous system, either directly or through the mediation of the endocrine glands, in the metabolism of sugar, calcium and the like, is well known. At this point, the thesis of Professor Forgue joins in with the theory of Delbet, who considers that the low magnesium content of the blood, due to dietary deficiencies, is a favorable preparation of the terrain for the development of cancer, a theory advanced, twenty years ago, by Dubar of Dijon and Albert Robin.

Hypersensitiveness of Digestive Origin

Various forms of hypersensitiveness are today quite the vogue. By their assumption, one endeavors to explain urticaria, Quincke's edema, eczemas, prurigos, asthmatic attacks, spasmodic coryza, certain forms of migraine, and even certain disorders of the sympathetic system influencing the digestive system. Mr. Pasteur Vallery-Radot, who has been occupied with these researches for a long time, gives his conclusions in an article in *Nutrition*. The chapter concerning therapeutics is the most interesting. For the acute attack there is but one remedy: epinephrine. To prevent the return of the attacks—that is, to desensitize the subject—the physician must display great sagacity, as the search for the offending antigen is not easy, since it varies with every patient. Vallery-Radot has given up skin reactions and cutaneous and intradermic injections. He prefers to produce a gradual tolerance for the antigen by a sort of vaccination, ingesting infinitesimal doses of the antigen an hour before meals and increasing the doses gradually and slowly. In order to act on several antigens, he recommends polyvalent peptones prepared with meat, fish and egg. One can use also subcutaneous injections of these peptones or intradermic injections. As general desensitizers he surveys the forms of medication capable of suppressing protein shock: intravenous injections of sodium thiosulphate or calcium chloride, autohemotherapy, autoserotherapy, intramuscular injections of a concentrated extract of pig spleen, including the modifiers of the vagosympathetic equilibrium: epinephrine, ephedrine, pilocarpine, atropine, phenobarbital.

Crusade Against Plague in Senegal

Senegal, French West Africa, is putting forth considerable effort to prevent the spread of the plague, which reappears every year in March or April in the same sections after a winter lull of three or four months. An area of experimentation comprising the commune of Rufisque and the districts of Thiès and Tivaouane has been mapped out, in which the maximum effort is being made. With fewer material resources, the administrators and the physicians of the districts of Baol, Louga and Sine-Saloum are endeavoring to put those sections in a state of defense. The brush for a radius of 300 meters about the villages has been cut down; incinerators have been constructed and ditches have been dug for the reception of garbage and privy contents; rat-proof granaries have been built and flea traps have been installed. The inhabitants are vaccinated either by the personnel employed by the medical aid service of the districts or by special crews in charge of a European physician. In a single month 82,230 vaccinations have been performed. These measures were applied first to the villages attacked by the plague in 1929 and 1930 and then were extended to some of the adjoining villages. At the same time an intensive antiplague campaign has been carried on in the region of Dakar, the capital of French West Africa. The disease causes every year more than 1,500 deaths in Senegal. The present crusade presents a peculiar interest in connection with the possible effects it may have on the march of the plague next year.

Deaths

Dr. Dujarrier, surgeon to the hôpitaux de Paris, has died suddenly from an embolism during convalescence from a cystotomy for vesical calculus. The decedent was a comparatively young practitioner but well known. He was director of the dissecting room of the administration of the Assistance publique à Paris. He is the author of a Traité de l'anatomie des membres, already become a classic among the students.

Prof. Eugène Darrier died recently at Montpellier, where he was professor of biologic chemistry and had been dean of the Faculté de médecine. He was one of the most eminent workers in biochemistry. Medicine is indebted to him for valuable researches on methemoglobin, porphyrins, oxidations of indole, and sulphonic derivatives.

BERLIN

(From Our Regular Correspondent)

Aug. 3, 1931.

Treatment of Sarcoma by Operation and Irradiation

Addressing the Berliner medizinische Gesellschaft, Dr. Hintze reported recently on about a thousand cases of sarcoma that were treated, or observed, at the University Surgical Clinic of Berlin and its Roentgen-Radium Institute, during the past seventeen years. The patients still living have been reexamined whenever feasible. In 214 cases, or 31.5 per cent of the 697 cases in which the first scientific treatment dates back five years or more, the patients have survived at least five years. Of the patients operated on only once, without prophylactic postoperative irradiation, 20.5 per cent survived five years or more; if those who were operated on two or more times are included, the figure becomes 28.7 per cent. In contradistinction, of the patients who received postoperative irradiation or at least irradiation in case of a recurrence after the operation, 39 per cent survived the five-year period. Only cases in which operation, because of the site or extent of the disease, was impracticable were subjected solely to irradiation. Even in these severe cases, 24.9 per cent survived five years or longer. Patients concerning whom later information could not be obtained (8.1 per cent of all the cases) were counted as deceased. Primary mortality (death within four weeks after the operation), as based on all the persons operated on, amounted to 12.1 per cent; that is to say, 70 out of 574 persons operated on died from the primary effects of the operation. Over against that number, there were only 62 patients who, following one or more operations, survived five years or more. Treatment of sarcoma must strive to effect a permanent cure. To that end, extirpation or even amputation is, in most cases, inadequate. In an increasing number of cases, roentgen and radium irradiation have proved capable of effecting enduring cures in sarcoma patients. Most of the cases encountered by practitioners receive the first treatment in the secondary stage, the stage of already apparent or still hidden regional extension. For such patients combined treatment—operation and prophylactic irradiation—deserve, thus far, the most confidence. If, owing to the nature or to the site of the tumor, operation appears unpromising (high primary mortality, high percentage of recurrence), irradiation is the method of choice. Before deciding on a mutilating operation, a single intensive irradiation is indicated in every case, the effects of which will not be fully evident until after the lapse of six weeks. Patients in the third stage with inoperable local extension can sometimes be saved by means of irradiation and can often be kept in a fairly good condition for years—able to do considerable work. In cases in the fourth stage, with remote metastases, irradiation of single foci that, owing to their site, constitute especially severe manifestations, will bring relief or even prolonged freedom from more severe suffering (severe pains, paralysis, stasis, dyspnea). If there are no such definite indications, irradiations in this stage are useless. Patients in the first clinical stage can either be operated on or be irradiated; but such patients should not be operated on without the application of prophylactic irradiation. The limits that are put on irradiation and operative treatment are fixed by the experiences herein described. The prospects of an enduring cure in sarcoma cases by means of roentgen and radium irradiation are being constantly extended with the improvement of technic, based on increasing experience. Progress in the treatment of tumors keeps pace with progress in irradiation.

"Life Experiences and the Genesis of Neuroses"

Prof. Ernst Kretschmer of Marburg delivered an address, June 30, before a large audience at the University of Berlin, at the invitation of the Gesellschaft für empirische Philosophie, on the subject "Life Experiences and the Genesis of Neuroses." The connection between life experiences and neuroses is more intimate than appears to the casual observer, and more intimate than has been commonly assumed heretofore even by the schools. The accidental occurrence does not produce the mental disorder. The experiences that are followed by pathologic conditions are nearly always typical and characteristic of the personality of the patient and his attitude toward life and the world; they are to a great extent the immediate outgrowth of his individuality. In spite of the fact that the causes of the pathologic condition are sought in the original personal predisposition, the life experiences nevertheless are significant in that they reveal the point of departure for the treatment of the neuroses, since they constitute the concrete material by which a patient may be led to see the inadequacies of his own nature.

Death of August Forel

August Forel, scientist, philanthropist, social hygienist and psychiatrist, who to many of the present generation may be known only through his works, has died at home on Lake Geneva, aged 83. Forel belongs to the epoch the character of which was determined by Darwin, Haeckel and Virchow; that is to say, to the period in which one could not attain eminence in medicine without being a scientist in the fullest sense of the word. In two widely separated fields, science will always count him among its chief promoters: in psychiatry and in entomology. His best known works treat of the biology and the sociology of ants (his entomologic collection is, in this field, one of the finest in the world) and of hypnotism. His work on hypnotism is notable as being one of the first books published in this field, today so important but at that time viewed with suspicion as partaking of charlatanry. For a medical man to take the stand that he did required at that time courage. It may be said, in fact, that Forel exerted the chief influence in causing hypnotism to receive scientific recognition. The extension of knowledge in this field may possibly make his work appear out of date; but his accomplishment is, on that account, none the less meritorious. Similar conditions obtain with reference to his well known work "The Sexual Problem." He was one of the first writers on this subject, and his publication gave rise to a flood of books with a similar trend. Unfortunately, few of his imitators attained his dignity of speech and his idealism free from hypocrisy. He was a native of western Switzerland and betrays evidence of French influence in the versatility of his genius, his inflammable temperament and his ready flow of speech. German was, however, his native tongue. His scientific studies were carried on at the universities of Zurich and Vienna, and at the Irrenklinik in Munich he served for many years as assistant physician. Later, he became the director of the famous Zurich hospital in "Burghölzli" and ordinarius at the University of Zurich. He made extensive study tours in many different countries and always brought home new ideas. His knowledge of psychiatry, together with his natural talent in the handling of sociopolitical problems, brought him (as similar qualities had elevated his great fellow specialist Kraepelin) to a position of leadership in dealing with the alcohol problem. He was a total abstainer and a strong advocate of nation-wide prohibition. It was a natural consequence that his plunging into the thick of the fight brought expressions of enmity that were aimed at the temperance movement as a whole. He was always ready to take up the cudgels in favor of temperance and was well equipped for the rôle he played. Forel gave an autobiographic account of his scientific career in his often cited work "Die Medizin der Gegenwart in Selbstdarstellungen." This odd literary effort gives a clear picture of the whole man, showing him to have been a combi-

nation of scientist and reformer. With the speed of the film his life is laid bare—a life that, even at his advanced age, knew no quiet deliberation; no undue dwelling on the sweet or bitter experiences of life but only the rapid transition from one recognized truth to the next, which, with restless energy, were translated into deeds.

TURKEY

(From Our Regular Correspondent)

Ankara, Aug. 16, 1931.

Health Regulations Regarding Means of Transporation

In conformity with the law, surgeons on Turkish vessels carrying passengers must be licensed to practice medicine in Turkey and be approved of by the ministry of health and social assistance. To be appointed a ship surgeon a physician must pass the special examination conducted by the ministry, which then grants a certificate stating that he is competent to take over the functions of ship surgeon. Medical supplies with which vessels carrying passengers should be equipped, the sanitation of the ships and measures to avoid overcrowding and to assure the safety of passengers are decided jointly by the ministry of health and social assistance and the ministry of national economy. Ship surgeons are to give gratuitous treatment to third class passengers and members of the crew, and attend to emergency cases and communicable diseases that may rise among first and second class passengers. The ship surgeon is to keep a record of all accidents on each voyage, the name of the patient, the diagnosis, the treatment and the hygienic conditions of the vessel. The record is to be indorsed by the captain and turned over to the coast sanitary inspector on the return voyage, at the port of departure. Vessels of all kinds, whether on a long voyage, coasting or engaged in river navigation, are subject to control by the officers of the coast sanitary supervising service. Captains of vessels are obliged to conform with regulations applied to vessels, in order to avoid communicable disease or epidemics. Persons having communicable and epidemic diseases may not be conveyed by means of public transportation except under authorization by the health inspector and under appropriate conditions. If the ministry deems it necessary, ambulance stations may be instituted at railway stations for the examination of passengers and merchandise coming from a community where an epidemic has arisen.

Railroad companies are to keep at the most important stations and in passenger cars first aid emergency medical supplies. Captains, engineers and pilots of vessels, railroad engineers, and drivers of automobiles and autobuses must undergo a physical and mental examination. At government hospitals, such examinations are made gratuitously.

The following regulations concerning ship surgeons have been published: To be appointed ship surgeon with a Turkish navigation corporation or on a Turkish boat it is not only necessary that the applicant be licensed in Turkey and pass the special examination but he must for at least three years have held an institutional position or have been at least three years engaged in private practice. Applicants must accompany their application to the ministry of health with their diploma, birth certificate and three photographs. The examinations are conducted by a board of examiners appointed by the ministry of health and social assistance. The written examination will consist of questions on bacteriology, epidemiology, communicable diseases, first aid treatment and obstetric emergencies, maritime hygiene, questions relative to regulations for the hygienic defense of boundaries and shores, and international agreements and treaties. The candidate will also have to make oral and written translations from some foreign language. The practical examination will concern bacteriology, communicable diseases, surgery and obstetrics. The bacteriologic examination will be conducted in a laboratory, and the examinations in minor surgery and obstetrics at a hospital and on patients. Candidates presenting a specialist certificate are exempt from further examination in that speciality. Bacteriologists are exempt from further examination in epidemiology, and medical specialists from examination in communicable diseases and epidemiology. Physicians wanting a position as ship surgeon's assistant may be employed as such without subjecting themselves to the examination but they may work only under the supervision of a duly qualified ship surgeon, on whom rests all responsibility. The employment of ship surgeons who were practicing as such before or at the time of the publication of these regulations is permissible; but they must within three months from the date of the publication of these regulations make application to the ministry, stating their diploma number, and the date of its issue, and give their official record. At the end of three months no such application will be considered.

THE UKRAINE

(From Our Regular Correspondent)

Odessa, July 28, 1931.

Protection of Childhood and Motherhood

In the present territory of the Ukrainian Socialist Soviet Republic, in the tsarist time, there were no institutions for taking care of children, as well as no laws for protecting the child and the mother. The living conditions of the poorest part of the people, the absence of laws defending their interests, and a very low cultural level (80 per cent of the population were illiterate) were the principal causes of the high rates of child mortality.

*Mortality of Children Under One Year of Age**

Years	In Towns	In Country Districts
1886	22.3	18.9
1910	21.7	18.5
1928	12.7	13.8

* Percentage per hundred births.

As may be seen from the accompanying table, under soviet rule child mortality has diminished. This decline of mortality rates began in 1923, after the civil war, the blockade and the intervention period came to an end.

This decrease was first of all due to a law, passed at that time, according to which children more than 14 years old are not permitted to work more than four or six hours a day; gainful labor of children under 14 years of age was altogether prohibited, as well as child labor in harmful industries and night hours for children over 14 years of age. Pregnant women and women nursing babies were also prohibited from labor.

According to the social insurance law, in the Ukraine as well as in all the Soviet Union every woman clerk has the right to take a six weeks' leave before and a six weeks' leave after childbirth. Factory women have the right to a leave a month longer; this corresponds to the difference between physical and mental labor.

Women working at the factory or in the office and nursing babies, after every three and one-half hours of work have half an hour's respite to nurse their babies. The women protected by this law can be discharged only by special permission of the inspector of the Committee for Protecting Labor.

Marriage and family laws in the Soviet Union are altogether different from similar laws in other countries. There exists no difference between "legitimate" and "illegitimate" children, as an official registration of marriage is not obligatory in the Soviet Union. The expenses for the child's education are divided in equal parts between both parents, as social education is not completely realized as yet. The mother has the right to receive from 25 to 50 per cent of the father's salary, and she must spend this money on bringing up her child. These laws extend to the population of the country districts.

In this way woman begins to get free from household duties and nursing the children. She keeps her health and youthful looks. Little by little she becomes materially independent. Now she can also become active in the social and political life of the country and raise her cultural level.

In the Soviet Ukraine a course is held on the collective education of all children, beginning even with nursing babies. Before the revolution there were in Russia six, at the most, institutions for taking care of the child's health. These were six consultation centers with milk kitchens.

Oct. 1, 1929, there were in the Ukraine 264 stationary public nurseries with 10,500 beds, and about 2,000 summer public nurseries in small towns. This number could not satisfy the increasing needs of the population. In 1930, special houses for public nurseries were built in towns, workers' settlements and collective and state farms. The construction of special buildings for this purpose (public nurseries and kindergartens) enters into the planning of new towns. They will embrace all children under 8 years of age.

The next group of children's establishments, the so-called children's homes, was created for children abandoned by their parents. In 1922, the year of the great famine, there were 348 such institutions, but in 1929 there were only 63 of them, with 1,500 beds. Such a decrease in number is due to the improvement in the economic condition of the Ukrainian population. In many country districts in the "children's home" no more derelict children are received, because there are none. For this reason the "children's homes" are reorganized as children's sanatoriums or public nurseries.

To prevent the poorer mothers from abandoning their babies, "homes for mother and child" are organized in different towns. Single women in the last months of pregnancy or mothers with children under 4 years of age are received in these homes. To pay for her keep, every mother staying there has to take part in all kinds of work organized in these homes: she has to knit and to sew in special organized works. This way she also learns a specialty. Oct. 1, 1929, there were nine houses for "mother and child" with 205 beds. Their number also is decreasing. The absence of unemployment and the growing prosperity of the working classes makes such a type of institution unnecessary.

Consultations about all kinds of questions concerning the protection of motherhood and childhood are most popular in the Ukraine. They give prenatal help to pregnant women and women having nursing babies; also to all children under 8 years of age.

Only 28 per cent of Ukrainian women receive organized help during childbirth; it is a small percentage, though several times larger than before the revolution. Now every collective and Soviet farm sends some of its members to obstetric courses. Thus it may be considered that, in the next few years, the necessary number of midwives will be available.

Large sums—every year they are getting larger—are assigned for institutions protecting childhood and motherhood. In 1926 the state assigned for this purpose 6 million rubles ($3,000,000) from its budget, and in 1929-1930 17 million rubles ($8,500,000). This money is used for the development of the institutions already described as well as for scientific investigations. Large sums are also assigned from local budgets and about one third of the money comes from the social insurance medical help fund.

The State Institute of Otorhinolaryngology in Kharkof

The State Institute of Otorhinolaryngology, founded in 1931, consists of the following departments: clinical, social-pathologic, physiologic and operative-surgical. There is also a pathologic laboratory, a museum, a library and a repair shop.

The institute proposes to study a series of problems: The pathogenesis of diseases of the upper respiratory tract; deafness and dumbness; scientific rationalization of the health departments' practical work in otolaryngology; formation of special medical cadres in the Ukraine.

In the repair shop, old special instruments are repaired and new ones made. It is hoped that soon it will not be necessary to import instruments, thanks to this repair shop, where new models of special instruments are made according to the authors' designs.

The institute has organized a bureau where those who are working in this field in rural regions may consult with the best specialists. It is also proposed to organize special courses with the aim of raising the qualification of physicians.

The Campaign Against Venereal Diseases

The first antivenereal medical institutions in the Ukrainian Socialist Soviet Republic were founded in 1922, but in 1923 it was necessary to organize an all-Ukrainian state institute for skin and venereal diseases. Its aim was to direct scientific work and to study the clinical and prophylactic aspects of dermatology and syphilology.

At first its work was of a scientific-consultative and experimental character; later the question arose concerning a deeper and more detailed study of the social and hygienic character of venereal diseases.

The cultural revolution in this country, which was accompanied by changes in family and sexual relations, was the principal cause of changes in the program of the institute. The institute is situated in Kharkof, the capital of the Ukraine. It is directing and studying the work of antivenerealogic institutions situated in other towns of the Ukraine and in country districts. It proposes all kinds of practical changes and improvements. Much attention is given to forming connections with the masses of workers by means of scientific conferences, organized in different factories, mills and workers' clubs.

During its eight years of existence, the institute has studied more than 170 scientific experimental problems. Many reports were made at scientific meetings and then published in the "Works" of the institute, as well as in the Ukrainian, Russian and foreign medical press.

At present the institute is working according to a special five-year plan, in which are included all the problems placed before the People's Commissariat for Health in the present period of reconstruction.

In its practical medicoprophylactic work, the institute keeps in touch with specialists and is gathering materials for scientific study.

At present there is a great need of specialists, as there are a great many antivenereal and skin disease dispensaries. The institute is training such specialists. It also has courses for aspirants and for physicians requiring requalification. Over 200 physicians have passed through this institute and are now fighting venereal diseases and prostitution.

At present the institute is studying the following clinical problems: diagnosis and treatment of latent syphilis; estimation of various methods of treatment; hereditary syphilis; gonorrhea; diseases of the skin.

Death of Prof. S. T. Zlatogoroff

Prof. Simon Zlatogoroff, who died in Leningrad, March 17, was born in 1873. He finished in 1897 the Military Physicians Academy and was made by the academy assistant of the clinic of bacteriology and infectious diseases. He was a specialist of bacteriology, epidemiology and infectious diseases. In 1903 he became lecturer (privatdozent) of bacteriology of the academy; in 1911 he was elected professor of bacteriology of the Psychoneurologic Institute in St. Petersburg (now State Institute of Medical Science). In 1920 he was elected professor of bacteriology in the Kharkof Medical Institute and director of the first Ukrainian Sanitary-Bacteriologic Institute. His first printed work that came out of Pavlov's laboratory was about the influence of thyroidectomy on the development of young animals. Among Professor Zlatogoroff's works, which number more than a hundred, about thirty are printed in foreign languages.

Marriages

NEIL MCLEAN, Devils Lake, N. D., to Miss Jessie M. Anderson of Edmonton, Alta., Canada, recently.

LAWRENCE F. CORRY, Weyauwega, Wis., to Miss Ann Kathleen Burke of Rochester, Minn., August 3.

FRAZIER CLYDE BEDSAUL, Galax, Va., to Miss Rosamond Vaughan of Spring Valley, September 9.

GUSTAV GULDSETH, Lake Preston, S. D., to Miss Elsie Nummedal of Minneapolis, recently.

INGLIS F. FROST, Morristown, N. J., to Miss Elizabeth Baker in New York, July 22.

ALEXANDER P. DEAK to Miss Kathryn H. Edge, both of Philadelphia, August 22.

SIEGFRIED F. STRAUSS to Miss Marian Grunsfeld, both of Chicago, September 9.

LEON H. HIRSH, Milwaukee, to Miss June Davidson of Racine, Wis., June 14.

PATRICK L. CALLAN to Miss Kate Crawford, both of Milwaukee, July 22.

JESSE NEAL MESSER, Houston, Texas, to Miss Julie Steel, June 5.

Deaths

John Samuel Fulton, Baltimore; University of Maryland School of Medicine, Baltimore, 1881; member of the Medical and Chirurgical Faculty of Maryland; at one time professor of state medicine at his alma mater and lecturer at the Johns Hopkins School of Hygiene and Public Health; formerly secretary and director of the state board of health; served during the World War; past president of the Conference of State and Provincial Health Officers; secretary general of the International Congress on Tuberculosis in 1908, and the International Congress on Hygiene and Demography in 1912; aged 72; died, August 12.

Joseph Herbert Ford ● Col., U. S. Army, retired, Arlington Ridge, Va.; Columbian University Medical Department, Washington, D. C., 1897; entered the medical corps of the U. S. Army in 1903 as captain; was awarded the distinguished service medal during the World War; retired for disability in line of duty, June 20, 1927; member of the American College of Surgeons; aged 58; died, August 19, in Boston, of heart disease and gastric ulcer.

Biddle Hiles Garrison ● Red Bank, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1898; member of the American College of Surgeons; surgeon to the Riverview Hospital, Red Bank, Ann May Memorial Homeopathic Hospital, Spring Lake, and Monmouth Memorial Hospital, Long Branch; consulting surgeon to the Monmouth County Tuberculosis Hospital, Allenwood; aged 54; died, August 29, of arteriosclerosis.

Henry A. Chapin ● Jacksonville, Ill.; Baltimore Medical College, 1895; past president of the Morgan County Medical Society; member of the Radiological Society of North America; on the staffs of the Passavant Hospital and the Jacksonville State Hospital; aged 59; died, August 10, in the Jewish Hospital, St. Louis, as a result of a tumor in the head of the pancreas and internal hemorrhages.

Andrew A. Cairns ● Philadelphia; Jefferson Medical College of Philadelphia, 1887; director of the department of public health of Philadelphia; at one time member of the state legislature, member of the advisory board of the state department of health and city medical inspector; aged 67; died, September 9, in the Lankenau Hospital, as a result of complications following an operation for an abscess.

Edwin Rapalje Bedford ● Brooklyn; New York Homeopathic Medical College and Hospital, 1894; member of the board of health of Brooklyn for many years; on the staffs of the Peck Memorial Hospital and the Prospect Heights Hospital; aged 59; died, August 15, in the Memorial Hospital, Albany, following an operation for appendicitis.

Emanuel S. Brodsky ● Bridgeport, Conn.; University of Zurich Faculty of Medicine, Zurich, Switzerland, 1908; member of the American Psychiatric Association; on the staffs of St. Vincent's Hospital and the Norwalk (Conn.) General Hospital; aged 52; died, August 16, in the New Haven (Conn.) Hospital.

Sigmund Leon Gans, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1895; Medico-Chirurgical College of Philadelphia, 1903; member of the Medical Society of the State of Pennsylvania; served during the Spanish-American and World wars; aged 56; died, August 25, in Haines Landing, Me., of cerebral hemorrhage.

Milton Howard Mack, Chicago; Medical College of Ohio, Cincinnati, 1892; at one time professor of gastro-intestinal diseases, Illinois Medical College; formerly on the staffs of the Jackson Park Hospital and the Frances Willard Hospital; aged 62; died, August 30, of cerebral hemorrhage and arteriosclerosis.

James Quitman Folmar ● Chattahoochee, Fla.; Atlanta Medical College, 1914; second vice president of the Florida Medical Association; served during the World War; medical director and superintendent of the Florida State Hospital; aged 40; died, August 8, of coronary sclerosis.

Samuel I. Jacobus, Millbrook, N. Y.; New York Homeopathic Medical College and Hospital, 1887; member of the Medical Society of the State of New York; formerly health officer of Millbrook; aged 71; died, August 13, of heart disease.

Francis H. McKeon ● Medical Director, U. S. Public Health Service, St. Louis; Georgetown University School of Medicine, Washington, D. C., 1902; aged 53; died, July 7, in the Marine Hospital, of subacute myocarditis.

Walter Clarke Howe ● Boston; Harvard University Medical School, Boston, 1898; member of the American College of Surgeons and the New England Surgical Society; aged 59; died, August 21, of cerebral hemorrhage.

Albert Henry Prouty, North Brookfield, Mass.; Harvard University Medical School, Boston, 1890; member of the Massachusetts Medical Society; aged 64; died, August 3, of carcinoma of the lower jaw and neck.

John Jackson O'Hara ● Janesville, Minn.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1898; president of the Waseca County Medical Society; aged 63; died, July 6, of coronary thrombosis.

Elmer Hempstead Ames, Jersey City, N. J.; Columbia University College of Physicians and Surgeons, New York, 1903; aged 54; died, July 23, in the Fairmount Sanitarium, of pulmonary edema and nephritis.

Mohammed Abbass Yahya, Cleveland; University of Illinois College of Medicine, Chicago, 1924; member of the Ohio State Medical Association; aged 37; died, August 4, in the Charity Hospital, of septicemia.

Walter Warner Palmer, New York; University and Bellevue Hospital Medical College, New York, 1899; aged 58; died, May 15, of toxemia and postoperative shock following an operation for intestinal obstruction.

Thomas Jerome Henneberry ● Cheyenne, Wyo.; University of Illinois College of Medicine, Chicago, 1907; aged 53; died, June 7, at the Mayo Clinic, Rochester, Minn., of suppurative cholecystitis with stones.

Robert Baxton Jarratt, Pennsgrove, N. J.; University College of Medicine, Richmond, Va., 1907; member of the Medical Society of New Jersey; aged 45; was found dead in bed, August 13, of heart disease.

Jasper Harvill Pickard, Hohenwald, Tenn.; Vanderbilt University School of Medicine, Nashville, 1897; member of the Tennessee State Medical Association; aged 55; died, August 5, of tuberculosis of the knee.

William Henry Payne, Yakima, Wash.; Northwestern University Medical School, Chicago, 1902; member of the Washington State Medical Association; aged 57; died, August 1, of coronary thrombosis.

Dennis Grooms Evans, Louisville, Ky.; Cornell University Medical College, 1925; member of the Kentucky State Medical Association; aged 33; died, August 19, in the Jewish Hospital, of agranulocytic angina.

Calvin R. Baird, Jellico, Tenn. (licensed, Tennessee, 1889); also a lawyer; formerly county superintendent of schools and member of the state legislature; aged 75; died, August 24, of carcinoma of the throat.

Joseph Mastbaum Asher ● Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1900; served during the World War; aged 53; died, August 6, in the Jewish Hospital, of carcinoma.

Charles A. Files, Van Wert, Ohio; Ohio Medical University, Columbus, 1894; superintendent of the District Tuberculosis Hospital, Lima, 1915-1923; aged 74; died, August 25, of cirrhosis of the liver.

Frank Wesley Lockwood ● East Orange, N. J.; College of Physicians and Surgeons, Baltimore, 1893; formerly on the

staff of St. Mary's Hospital, Orange; **aged 59; died, August 9,** of arteriosclerosis.

Urban R. Fox, Seiling, Okla.; Vanderbilt University School of Medicine, Nashville, Tenn., 1903; county health officer; aged 51; died, August 16, in the Enid (Okla.) General Hospital, of gastric ulcer.

Daniel Edgar Stratton, Chinese Camp, Calif.; State University of Iowa College of Homeopathic Medicine, Iowa City, 1886; aged 69; died, July 9, in the Morton Hospital, San Francisco.

Allan G. Rankin Hedgeville, Ky.; University of Louisville (Ky.) School of Medicine, 1890; aged 67; died, July 31, in the Danville and Boyle County Hospital, Danville, of nephritis and uremia.

Wilkins Wythe Osborn, Upper Middletown, Pa. (licensed, Pennsylvania, 1881); member of the Medical Society of the State of Pennsylvania; aged 90; died, April 29, of nephritis.

John A. Pinnix, Yanceyville, N. C.; College of Physicians and Surgeons, Baltimore, 1875; Confederate veteran; aged 85; died, July 29, in Union Ridge, of chronic nephritis and uremia.

T. S. R. Ward, Blacksburg, S. C.; University of Tennessee Medical Department, Nashville, 1882; formerly a druggist; aged 72; died, July 31, at the home of his son in Rock Hill.

Lawrence Thompson Newhall ● Brookfield, Mass.; University of Vermont College of Medicine, Burlington, 1881; aged 74; died, July 10, of illuminating gas, self-administered.

William Alfred Conlon, Central Islip, N. Y.; Long Island College Hospital, Brooklyn, 1909; aged 55; died suddenly, June 28, in the Central Islip Hospital, of coronary sclerosis.

John L. Jones, Searcy, Ark.; Vanderbilt University School of Medicine, Nashville, Tenn., 1886; member of the Arkansas Medical Society; aged 75; died, July 28, of myocarditis.

Jeff William Hayward ● Kansas City, Kan.; University Medical College of Kansas City, 1909; formerly county coroner; aged 46; died, August 8, of nonepidemic encephalitis.

Charles Otis Gingles, Carmen, Okla.; University of Louisville (Ky.) School of Medicine, 1897; aged 57; died, August 8, in the Masonic Hospital, Cherokee, of embolism.

William Meredith Pugh, Kenosha, Wis.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1890; aged 66; died, August 1, of senile dementia.

Edward Brinkman, St. Louis; St. Louis Medical College, 1885; aged 67; died, July 31, in the Missouri Baptist Hospital, of cerebral hemorrhage and arteriosclerosis.

Montgomery V. Patton, Springfield, Ohio (licensed, Ohio, 1896); member of the Ohio State Medical Association; aged 87; died, July 26, of cerebral hemorrhage.

George S. Rinehart, Cassville, W. Va.; Western Pennsylvania Medical College, Pittsburgh, 1901; aged 55; died, June 1, of chronic pulmonary tuberculosis.

John Wesley MacLachlan ● Seattle; University of Michigan Homeopathic Medical School, Ann Arbor, 1886; aged 68; died, August 1, of myocarditis.

Governor Reid Townsend, Fort Worth, Texas; Meharry Medical College, Nashville, Tenn., 1884; aged 75; died, July 27, of influenza and pneumonia.

Alfred Costales, Brooklyn; Bellevue Hospital Medical College, New York, 1878; aged 74; died, June 24, of carcinoma of the prostate and bladder.

James Henry Beatty, Mascoutah, Ill.; St. Louis University School of Medicine, 1913; aged 65; died, April 20, of tuberculosis of the lungs.

Frank Llewellyn Bowsher, Steubenville, Ohio; Medical Department of the University of Illinois, Chicago, 1906; aged 49; died, June 29.

Julius Domino, St. Louis; University of Göttingen, Germany, 1890; aged 67; died, June 27, of heat prostration and pernicious anemia.

Jesse Butler Hull, Alexandria, La.; University of Michigan Medical School, Ann Arbor, 1886; aged 65; died, July 23, of heart disease.

William Franklin Sturgill, Palm Harbor, Fla.; Miami Medical College, Cincinnati, 1887; aged 74; died, April 12, of heart disease.

James H. Drane, Dyer, Tenn. (licensed, Tennessee, 1889); Civil War veteran; aged 87; died, July 4, of carcinoma of the colon.

Philo A. Tyler, Lansing, Mich.; Detroit College of Medicine, 1894; aged 67; died, June 29, in St. Lawrence Hospital.

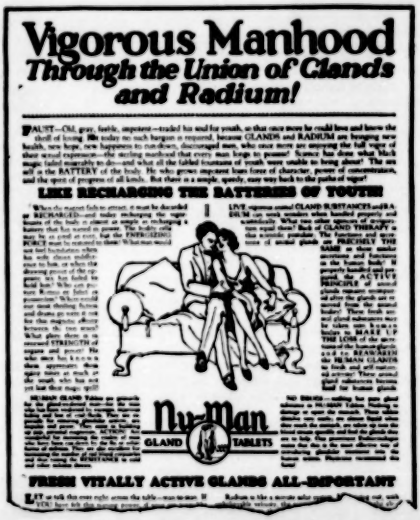
Louis Cocciola, Birmingham, Ala. (licensed, Alabama, 1900); aged 75; died, August 26, in a local hospital.

Bureau of Investigation

SOME DENVER FRAUDS

The Home Products Company, Hormex Company, Vitatone Remedy Company, West Medicine Company and Western Medical Clinic, All Indecent Swindles, Barred from the Mails

HOME PRODUCTS COMPANY AND HORMEX COMPANY.—Readers of this department of THE JOURNAL may remember the names of the three Gurley brothers, Eugene P., Harry N. and John A., and a brother-in-law of this outfit, one Robert T. Nash, who conducted a fraudulent consumption-cure scheme from Denver that in November, 1924, was debarred from the United States mails. The nostrum was sold under two names —Heilol and Hælan—and the men did business under the trade name General Remedies Company. At the same time that the government declared the "consumption cure" a fraud, it also issued a fraud order against a crude and indecent piece of quackery operated by the same quartet under the name of



Greatly reduced photographic reproduction of part of an advertising circular occupying more than two square feet, sent out by the Home Products Company of E. P. Gurley and R. T. Nash.

Vital-O-Gland Company. This concern sold an alleged treatment for impotence in men, and also sold a mechanical masturbator.

Eugene P. Gurley, Harry N. Gurley and Robert T. Nash are again the subjects of fraud orders just issued. Eugene P. Gurley and Robert T. Nash have been operating a concern under two trade names: Home Products Company and Hormex Company. Remittances to the former were made payable to Gurley and those to the latter were payable to Nash. Acting Solicitor, of the Post Office Department, Hon. W. E. Kelly, in his memorandum to the Postmaster General recommending the issuance of a fraud order, stated that the Home Products Company and the Hormex Company were really a continuance of the old Vital-O-Gland Company. The Home Products Company was selling through the mails tablets, suppositories, bougies and "Magik Radium Ointment" for the alleged sexual stimulation of men, and some tablets and special suppositories for the

same alleged purpose for women. The attorneys for E. P. Gurley and R. T. Nash, Home Products Company and Hormex Company in this case are reported as being Donald F. Clifford of Denver and E. C. Brokmeyer of Washington, D. C.

One wonders whether the E. C. Brokmeyer mentioned in the government's report is Eugene C. Brokmeyer of Washington who was, and may still be, attorney for the Coca Cola Company and for the National Association of Retail Druggists, and who is alleged to have fathered the "joker" in Section 6 of the Harrison Narcotic Law, which exempts from the provisions of the Act decocainized coca leaves or preparations made therefrom and other preparations of coca leaves which do not contain cocaine. The apparent object of that "joker" was to permit the use of what the Coca Cola concern called its "Merchandise No. 5."

The Hormex Company's nostrums were, according to the government report, substantially the same products under different labels. Without going into details regarding this nauseatingly filthy piece of quackery, it is sufficient to say that the scheme was declared a fraud and on August 25, 1931, the Postmaster General debarred from the United States mails the Home Products Company, the Hormex Company, E. P. Gurley and R. T. Nash.

An interesting side-light is thrown on the consumption-cure quackery in the old Hælan case by the present memorandum, which states that John A. Gurley, the third of the three Gurley brothers, and the one of the three who is not connected with the present swindle, is in a sanatorium suffering from tuberculosis, from which disease, it is declared, he was also suffering at the time he and his brothers were swindling consumptives with the sale of Hælan.

VITATONE REMEDY COMPANY.—According to a memorandum of Acting Solicitor W. E. Kelly of the Post Office Department to the Postmaster General recommending the issuance of a fraud order against the Vitatone Remedy Company at Denver, this concern was incorporated in January, 1930, with Dr. L. T. Moore, president, Mrs. L. T. Moore, vice-president, and Harry N. Gurley, secretary, treasurer and manager. L. T. Moore, M.D., was, according to the records of the American Medical Association, born in Alma, Neb., in 1885, holds a diploma from Creighton Medical College, 1907, was licensed in Iowa the same year, in Nebraska in 1909, in Utah in 1914 and in Colorado in 1916. Dr. Moore first practiced, apparently, in Council Bluffs, Iowa. Later he was in Campbell, Neb.; still later in Salt Lake City. In 1917 he moved to Denver, where he still is.

The Vitatone Remedy Company was similar in scope to the Home Products Company, the Hormex Company, etc. In other words, it sold alleged cures for sexual weakness. They consisted of rectal suppositories, urethral crayons, and tablets to be taken internally. The suppositories were found by the federal chemists to contain a soluble lead salt, so that the continued use of the preparation would be likely to result in lead poisoning. This scheme, too, was declared one for obtaining money through the mails by means of false and fraudulent pretenses, and on August 28, 1931, the Postmaster General closed the United States mails to the Vitatone Remedy Company.

WEST MEDICINE COMPANY AND WESTERN MEDICAL CLINIC.—In his memorandum to the Postmaster General recommending the issuance of a fraud order, Acting Solicitor W. E. Kelly stated that the West Medicine Company was established in 1893 by one Charles West, the father of Amos C. West, the present owner; that previous to the acquisition of the company by Amos C. West, it was conducted by Dr. George D. Hoschouer, who acquired the business from Dr. H. C. Benson. The records of the American Medical Association fail to show that there ever has been an H. C. Benson who was graduated by any reputable medical school or licensed to practice medicine in any state in the Union. Dr. George D. Hoschouer, according to the records of the American Medical Association, was born in Friend, Neb., in 1883 and holds a diploma from the Lincoln Medical College of Cotner University, 1910. He is licensed in Nebraska and Colorado. Dr. Hoschouer has advertised in the Denver newspapers as a "specialist" in the removal of cancers, tumors and ulcers—"No Knife; No Pain." His name also appears in a list issued in 1923 of physicians who were alleged to be using the so-called D. V. Ireland method in the treatment of rectal disorders. He has practiced variously at Swanton, Neb., and Eckley and Denver, Colo.

Hoschouer and Benson conducted the enterprise under the name Western Medical Clinic, but the name was changed back to West Medicine Company when Amos C. West took it over. The business has consisted in the sale through the mails of two preparations, 909 and Brigham Young Tablets. The former was sold as a cure for syphilis; the latter as a cure for "lost manhood." Chemical analysis of 909 by the federal authorities showed it to contain 3½ grains of gold and sodium chloride to the ounce. The Brigham Young Tablets were found to be composed mostly of sugar, starch and talc, with green vitriol (ferrous sulphate), baking soda, a little zinc phosphide, and a trace of nux vomica.

The Central Savings Bank
& Trust Company

Denver Colorado
June 6th, 1930.

To whom it may concern:-

Mr. E. P. Gurley and Mr. R. T. Nash,
owners of The Hormex Company, have been valued clients of
ours for a number of years. We have always found them honest,
trustworthy and financially responsible, and are pleased to
recommend them to the favorable consideration of anyone.

Yours very truly,

ASSISTANT CASHIER.

A photographic reproduction (reduced) of part of the "come-on" material used by E. P. Gurley and R. T. Nash in exploiting the indecent Hormex Company's swindle. Note that the Central Savings Bank and Trust Company states, as late as June, 1930, that E. P. Gurley and R. T. Nash have always been found "honest" and "trustworthy." Yet it is a matter of record that E. P. Gurley and R. T. Nash had both been involved in crude and indecent swindles in 1924.

Amos C. West, according to the memorandum, has had no medical training, but is a chiropractor, and is also engaged in the real estate business. On August 24, 1931, the Postmaster General debarred from the mails the West Medicine Company and the Western Medical Clinic.

Correspondence

"GENESIS OF VITAMIN D"

To the Editor:—An editorial, August 8, notes the small part of the surface of an albino rat not covered by hair and therefore susceptible of receiving ultraviolet influence.

Rachitic baby chicks placed in the sunshine recover rapidly. Such chicks are covered all over except the legs and the toes with thick down. Not even the eyelids are exposed. The legs are practically always in the shade of the round downy body.

Cows which roam in the sunshine or which are irradiated in their barns during winter give milk richer in vitamin D than those receiving no ultraviolet rays. The only parts of a cow unprotected by hair are her nose and the lower parts of her udder, and these parts present toward the ground and are practically always shaded by the cow's head and body. Considering, too, the small area of these parts as compared with the weight of the animal, it would seem highly improbable that enough ultraviolet influence enters through these ports to affect materially the animal's whole organism.

This remark applies equally well to young chickens and in a lesser degree to white rats.

The combined area of the face, neck and hands of a member of the genus *Homo* is far greater in proportion to the whole skin area than the uncovered parts of the animals mentioned. In spite of this greater area it is not deemed sufficient nor found sufficient in practice when treating bone tuberculosis or any other disease in which ultraviolet rays are indicated to instruct the patient to walk, lie or sit in the sunshine fully clothed.

Hair, down and feathers are living appendages of the skin. They receive their nourishment from the skin. There is no blood or nerve supply to their remoter parts, but vital influence is in some way transmitted to these appendages. This being true, I have always regarded it as possible and highly probable that these living appendages of the skin have the ability to absorb and transmit to the organism ultraviolet influence.

It would seem almost absurd to think of nature having provided animals with a covering impervious to an influence necessary to life. Poor animals with only the tips of their noses and ears left sticking out to serve as life preserving inlets for ultraviolet rays! Why have they basked in the sunshine for years when sunning the tips of their noses and ears would have served them just as well?

It is my opinion that the life of a rachitic white rat could not be saved by the usual doses of ultraviolet radiation if the body of the little animal were clad in a rather closely woven garment of hair from another animal and so cut as to leave only the nose and ears exposed. Nor am I inclined to think that an overdose of ultraviolet radiation would prove rapidly fatal to a normal white rat protected by such a garment.

At this point it might not be idle to suggest an explanation of the fact that animals covered with a heavy coat of hair or feathers do receive, apparently in full measure, the benefits of ultraviolet radiation. The ample supply of oil on an animal's coat is supposed to serve the purpose of helping to make the fur or feathers turn water and thus keep the animal dry and warm. It may, however, serve another purpose also. It is a well known fact that many oils become rich in vitamin D when subjected to ultraviolet radiation. May it not be true that the oil on an animal's coat receives the beneficial influence of the ultraviolet rays and that by resorption of this changed oil passes them on to the circulatory system?

When we consider the slight or entirely absent penetrating power of ultraviolet rays we must acknowledge that no very clear or convincing explanation has ever been offered as to just how this influence does get "under the skin."

The explanation may be as simple as hinted in the foregoing: Every normal skin is covered by a thin film of oil. This oil acquires new properties from ultraviolet radiation and this changed oil may reach the blood stream by being absorbed. The fact that every bare skin irradiated by ultraviolet rays acquires a certain decided and not easily forgotten odor suggests that some such changes are taking place in its oily covering.

Reasoning from the foregoing observations, it would certainly seem rational to hold that living hair, fur, down and feathers do *not* constitute a protection from ultraviolet influence; that the oily film of an animal's coat receives ultraviolet influence and by resorption transmits it to the general organism, and that ultraviolet influence is gotten under the skin of the human being in much the same way, that is, by absorption of its oily covering after it has received ultraviolet changes.

Whether or not these assumptions are facts could likely be established experimentally, but so far to my knowledge this has not been done.

W. S. LAWRENCE, M.D., Memphis, Tenn.
Associate Professor of Roentgenology,
University of Tennessee College of
Medicine.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

STERILIZATION OF CATGUT

To the Editor:—Should ether or alcohol be used to cleanse the area before hypodermic injections of pituitary solution and magnesium sulphate? Why? What are the best methods of sterilizing catgut and why? Please omit name.

M.D., Florida.

ANSWER.—Alcohol has been found to be a satisfactory antiseptic on the skin, before injecting various hypodermic medications, including solution of pituitary and magnesium sulphate solution. However, the magnesium sulphate solution should be injected well under the skin into the subcutaneous tissues or there may be some edema and temporary blanching of the skin. This is not due to the skin preparation with alcohol. It is doubtful whether ether should ever be used because of its inflammability, since there are so many equally good skin antiseptic solutions on the market.

There is no reason to think that any skin antiseptic would penetrate deeply enough to change the chemical content of the medication used if it is injected subcutaneously, by a hypodermic needle. In case the alcohol is used for sterilizing the syringe, it should be washed out with water before the syringe is filled with any medication, since the alcohol will precipitate many of the water soluble solutions. This would not ordinarily apply to ether because of its rapid evaporation.

Methods of "sterilizing" catgut are variable and many of them are trade secrets. Meleney and Chatfield (*Surg. Gynec. Obst.* **52**:430 [Feb. 15] 1931) found that among 174 specimens of catgut obtained from 12 different surgical clinics throughout the country there were 22, or 12.5 per cent, which yielded spore-forming bacteria.

These workers have been concerned chiefly in the final check up to determine that the product is sterile. They developed a standard test that is efficient, practical and acceptable to some of the leading catgut firms. There is no one accepted standard method of sterilizing catgut at this time. Surgeons must concern themselves with assurance of sterile catgut through adequate tests performed by the makers. This assurance may be obtained if they or their hospitals will purchase supplies only from those firms which conscientiously and continuously apply the test for sterility of catgut as outlined by Meleney and Chatfield. Some of the leading catgut manufacturers are now using this test for sterility.

In choosing catgut, it must be borne in mind that iodine, chromic and tannic acids, and certain other medicinal substances in the catgut, may irritate the tissues and lead to suppuration, particularly where large strands of catgut are left. This may be no fault of the method of sterilization, but any catgut should be used in as fine a strand as possible and under good aseptic surgical conditions. Catgut should rarely be used in the skin, and irritating substances used to sterilize or harden catgut should be avoided as much as possible.

VITILIGO

To the Editor:—I am desirous of information on what is known of vitiligo. In the etiology please refer to age, heredity, sex and race, and the endocrine glands. Is locality any factor? If so, what is its geographic distribution? What is the prognosis? What is the treatment? Please omit name.

M.D., New Jersey.

ANSWER.—Little of practical importance is known regarding the etiology of vitiligo. The condition begins most commonly in the second and third decades and is rarely seen developing before the tenth year or after the fortieth.

There is some evidence that heredity plays a part in certain cases. Females are affected more commonly than males. The disease is somewhat more common in the dark skinned races.

The prognosis is not good, although the spread of the disorder usually ceases after a variable proportion of the skin has become depigmented. The disorder occurs frequently in neurotic individuals.

Vitiligo has been seen occasionally in association with alopecia areata, morphea, lichen planus and a variety of other disorders, notably tabes dorsalis and exophthalmic goiter.

There is no satisfactory treatment, although cases have been reported which have been treated with thyroid and suprarenal substances as well as with iron and arsenic preparations. Recently Lindsay has reported a restoration of pigment following the use of gold salts intravenously. The use of water-

V 19

cooled mercury arc in quartz lamps has also produced good results in exceptional instances. On the whole, little is to be expected from treatment. The affected areas may be rendered less conspicuous by painting them with a solution of walnut juices or a brown stain, such as bismarck brown.

STREPTOCOCCUS VIRIDANS SEPTICEMIA

To the Editor:—A man, aged 32, weighing 200 pounds (90 Kg.), had scarlet fever five years ago, influenza in 1929, and has had a tonsillectomy. The clinical onset suggested rheumatic fever. Blood culture showed from 10 to 15 colonies of *Streptococcus viridans* per cubic centimeter. Careful investigation by consultants failed to reveal any focus. Sodium cacodylate was used at first. At the point of intoxication with the drug there was noted a lowering of temperature for one day. This was considered coincidental. Intravenous injections of 0.5 per cent acriflavine base have been given every four or five days for five times. The number of colonies is at present 1 or 2 per cubic centimeter. The temperature now ranges between 99.5 and 102 F. The pulse goes up to 130. There is an endocarditis with aortic diastolic and mitral systolic murmurs. The blood pressure is 130 systolic and 60 diastolic. There is slight anemia (red blood cells, 4,000,000; hemoglobin, 75 per cent). White cells numbered 16,000, of which neutrophils were 59 per cent, eosinophils 1 per cent, Lymphocytes 34 per cent and large mononuclears 6 per cent. The urine showed a trace of albumin. Microscopic examination disclosed no blood, casts or leukocytes. The Wassermann reaction was negative. The course is septic with sweats, malaise, intestinal upsets, belching, and tenderness about the joints. There have been petechiae on the eyelids and hands. 1. In view of the seriousness of the prognosis can you offer any therapeutic suggestions that may be of value? 2. Are there any reported recoveries of *Streptococcus viridans* septicemia with undiscovered focus and an endocarditis? 3. Is a bacteriophage for *Streptococcus viridans* available and if so would it be of any value in this case? 4. Would preparing an autogenous vaccine from the culture, immunizing a donor with it and then using small infusions (from 400 to 500 cc.) every five to seven days be worthy of trial?

N. H. POLNER, M.D., New Orleans.

ANSWER.—1. There are no applicable therapeutic suggestions to offer.

2. There are a number of reports dealing with recovery in such cases of *Streptococcus viridans* endocarditis, but, of course, the fact that recovery in such cases merits a report is only an indication of the infrequency of recovery.

3. Bacteriophage has not been shown to be of value.

4. The use of autogenous vaccine in malignant endocarditis by immunization of a donor and subsequent transfusion has been reported. While definite clinical improvement was noted, no lives were saved.

POSSIBLE TUMOR OF CAUDA EQUINA

To the Editor:—Please give the possible diagnosis, prognosis and therapy in a man, aged 53, who two years ago began to have a tingling sensation of the toes of the right foot, followed by cramplike contractions inward (spasticity) of the foot. At present, on voluntary movements only, there is a unilateral plantar flexion of the toes, adduction of the foot and marked spasm of the internal muscles of the leg. The reflexes are slightly exaggerated but there is no Babinski reflex. There is no atrophy of this leg, sensations being normal. Otherwise the general condition is apparently normal: blood and spinal fluid Wasserman reaction negative, blood pressure normal. There is no history of trauma or any severe infection. Would Fibrolysin (solution thiosinamine sodium salicylate) be of value in this case? Please omit name.

M.D., New York.

ANSWER.—If this patient's trouble is limited to the toes of his right foot and the information given as to the conditions found is correct, one must be suspicious of a slow-growing tumor in the cauda equina. Thiosinamine would be of no value. It is advised that the condition of the patient be followed closely for some time with careful sensory examinations.

DERMATITIS

To the Editor—What can be done to relieve an eczematous condition of the face and forehead resulting from the use of an ointment too strong in ammoniated mercury? The patient used the ointment once, just about two months ago, and still complains of a burning and drawing of the skin. The burning sensation is increased after the use of soap and water, or on the application of creams and the like. Please omit name.

M.D., West Virginia.

ANSWER.—There is multiple sensitization to alkalis as well as to the ammoniated mercury ointment. This often happens after dermatitis of various origins. The patient should avoid soap and water by washing with oatmeal water, made by boiling a few handfuls of oatmeal, putting it in a gauze bag and squeezing the bag in the water in which the oatmeal was cooked. Some of this water should be added to the lukewarm or cool wash water. The face should be dabbed dry, not rubbed. The oatmeal water is soothing and may be used frequently for a lotion. It should be made fresh every day or so.

PAROTITIS WITH TINNITUS—SPLENECTOMY IN MALARIA

To the Editor:—1. A man, aged 36, recently recovered from bilateral parotitis. He remained for three weeks in bed, suffering the last week with dizziness, tinnitus, and deafness in the left ear. At present he is deaf on the left side. There has been no tenderness or evidence of infection. What is the correlation, if any, of the deafness and the parotitis? What would be the explanation of the continued bitter-like abnormal secretion from a paratid gland after the swelling has disappeared? 2. A large spleen was removed from a boy of 16 after traumatic rupture. Blood smears revealed estivo-autumnal malarial organisms. His convalescence was uneventful. Clinical observation of the boy a month later has not revealed evidence of malaria. Could this result be expected from splenectomy? Kindly omit name and address.

M.D., California.

ANSWER.—1. It happens not infrequently that an acute parotitis causes marked impairment and even a complete loss of hearing as the result of a toxic neuritis involving the eighth nerve, and this condition often is a permanent one. The tinnitus is, no doubt, due to involvement of the inner ear, as both the hearing and the vestibular mechanism are affected. Even though the swelling of the parotid has disappeared, it is possible to have some abnormal secretion from the gland for some time thereafter.

2. It is possible that the spleen may have been removed at a time when practically all the parasites were located in the spleen. There is evidence to indicate that the parasites may be found only in the spleen in latent malarial infection of the estivo-autumnal type.

THE CILIARY BODY AND THE ORA SERRATA

To the Editor:—It is said that in the human eye the muscle is not attached to the sclerotic at the ora serrata. In dissecting the eye of a young cougar, I found that there is a definite adhesion of the ciliary body along the line of the ora serrata to the sclerotic. A slight adhesion also appeared to me to exist in the sheep's eye along the ora serrata, but nothing like as definite as in the cougar. I should be glad to get a translation of the anatomist Mannhardt's views on this subject, although I note that Gullstrand and Möller ridiculed his ideas on mathematical and anatomic grounds. I am by no means satisfied that the ciliary body is free from the sclerotic at the ora serrata, but I have no opportunity of verifying the point in human eyes.

REGINALD A. YELD, M.D., Edgewood, B. C.

ANSWER.—The adhesions between the choroid membrane and the sclera are by no means marked at any point, but there are slight so-called adhesions which would be represented by the suprachoroidea, which structure is so fragile that the choroid is easily separated from the sclera through its entire extent. However, it is to be noted that in detachment of the ciliary body, dependent on traumatism, the detachment generally ceases at the ora serrata.

This apparent adhesion at the margin of the ora serrata is dependent on the fact that at this point blood vessels and nerves are passing from one tunic to the other and hence offer a slight resistance when an attempt is made to separate the membranes.

If the sclera and cornea are cut away from the normal human eye and the whole uveal tract is left intact, including the choroid, ciliary body and iris, a fuzzy condition of the external portion of the choroid will be observed which is dependent on the broken fragments of the suprachoroidea.

There are many variations in these structures, of course, in the various forms of lower animal life.

PREMATURE CLOSURE OF THE FONTANELS

To the Editor:—I have a patient who was born with closed fontanels. She is now 2 years old and has developed convulsions. She also gives a history of falling forward in the last six months. I should like to know its etiology and treatment. I might say that her Wassermann test is negative, the spinal fluid is under pressure (30 per minute) and she has choked disks. I should particularly like to know the frequency of early ossification of the fontanels or any literature that discusses this entity. Please omit name.

M.D., Illinois.

ANSWER.—Holt states that in rare cases the anterior fontanel either may be closed at birth or may be closed during the first few weeks of life. Closure of the fontanel before the sixth month indicates a serious condition, usually microcephalus. Premature ossification of the skull may account for a few of the cases, with secondary arrested growth of the brain. Usually, however, early ossification of the skull is a consequence of arrested growth of the brain and not the reverse. The prenatal reasons for the developmental arrest in the brain are for the most part unknown. Feer states that it may be purely a matter of perverted development with abnormal convulsions, microgyria and the like; or the fetal brain may be injured and atrophied as

the result of inflammatory or vascular lesions. Microcephalus results in idiocy, in which condition some are active and lively while others have convulsions and general muscular rigidity with or without paralysis. Sachs states in Abt's Pediatrics that, since the early closure of the sutures is not due to defective bony growth but to maldevelopment of the brain (agenesis of the cortex), making new sutures so that the brain might expand is misdirected effort. No surgical measures are indicated if the patient is mentally deficient. Otherwise a decompression might be indicated to alleviate the convulsions and choked disks. Repeated spinal punctures and sedatives are probably the best palliative treatment.

"TOBIN BRONZE"

To the Editor:—Could you advise me as to any ill effects that would result from inhalation of the fumes of "Tobin bronze," the trade name of material used in brass, copper and cast-iron welding? What would the physical signs and symptoms be and what would the prophylaxis be? My patient complains of pain in the chest, nasal catarrh and fatigue.

H. S. EVERETT, M.D., St. Stephen, N. B.

ANSWER.—"Tobin bronze" is believed to be a product of the American Brass Company of Waterbury, Conn. Available published material indicates that it is made up of approximately 60 per cent of copper, 40 per cent of zinc and 2 per cent of tin. The melting point of this mixture is about 1,625 F. Exposure to appreciable quantities of fumes from this metal at the temperature indicated may be expected to give rise to a condition best termed "metal fume fever" but more commonly known as "zinc chills" or "zinc fever." The major characteristics of this condition are inflammation of the conjunctivae and respiratory passages, insatiable thirst, and at times severe chilling followed by prostration, later by profound fatigue. The sensation of constriction of the chest is a common manifestation, and bronchitis may arise. Usually this abnormal condition arises at night, after exposure during the day to "zinc" fumes. No chronic form is known to exist.

Protection in this occupation may be procured by the wearing of positive pressure masks, by the dispersion or entrainment of the fumes at the point of origin, or by merely diverting the fumes from the breathing area by the use of fans.

RESIDUAL BIRTH INJURY

To the Editor:—A boy, aged 4½ years, suffers from a birth injury (probable cerebral hemorrhage). At the age of 5 months he developed spells during which the eyes and head turned to the right. There was right hemiplegia. At the age of 9 months much fluid was removed from the left brain by trephining. For two years the results were excellent and the spells disappeared. At the age of 3 years the baby had one attack, lasting for about fifteen minutes; the eyes and head turned to the right side and he was semiconscious. Four months later pharyngeal spasms developed. The child still complains of pains in the mouth; he occasionally makes movements like chewing. The tonsils and adenoids were removed. Five months later the child had an attack lasting for half an hour; the eyes and the head turned to the right side. The child is mentally retarded about one and one-half years. He has been getting continuously for the last two months one-half grain (0.03 Gm.) of phenobarbital (luminal) twice daily. This controls the attacks, but the child is still very irritable. 1. Is it advisable to increase the daily dose of phenobarbital to 2 grains (0.13 Gm.) in four doses to reduce the extreme nervousness? 2. Is it advisable to alternate, periodically, phenobarbital with calcium bromide or sodium bromide? 3. Is it of practical value to perform a lumbar puncture and encephalography? 4. Should there be borne in mind the question of a second craniotomy to remove a remediable lesion? 5. What is the cause of the pharyngeal spasms and what is the remedy? 6. Is it preferable to keep him home among normal children or to send him to a special school of adjustment for backward children? Please omit name and address.

M.D., Massachusetts.

ANSWER.—The patient undoubtedly is suffering from a residual birth injury due to cerebral hemorrhage, and the eclamptic attacks from which he suffers are the result of old scarring in the cerebral tissues. Suggestions regarding the queries are as follows:

1. The dosage of phenobarbital which is at present being employed probably is the maximum optimal dose for a child of this age.

2. Phenobarbital is the most satisfactory drug for this condition, though a bromide preparation may be tried in addition to control nervousness.

3. In the *American Journal of Diseases of Children* (August, 1930), Bronson Crothers concluded that encephalography should be used before final judgment is passed on the future of children severely handicapped by fixed cerebral lesions unless other less severe methods are demonstrably adequate. The procedure of encephalography probably would add no information in this case, in which definite mental retardation has already evidenced itself.

4. Craniotomy at this stage of the condition seems to offer little chance for improvement and has possibilities for serious harm.

5. Pharyngeal spasms occurring at the age of 3 years and 4 months would exclude spasmophilic tetany as an etiologic factor. The cerebral nuclei or nerve tracts controlling the muscles of the pharynx have probably been occasionally stimulated by the old scarring resulting from the original injury at birth. Phenobarbital should help control these spasms.

6. In view of the child's mental retardation, which is probably associated with some microcephaly, it would be preferable to send him to a special school for his education. While a definite prognosis as to his future mental capacity cannot be given, his learning power will probably improve at a special school, although he will probably never reach full mental development.

USE OF POTASSIUM PERMANGANATE INTRAVENOUSLY IS IRRATIONAL

To the Editor:—I would greatly appreciate hearing from you as to the advisability of the intravenous administration of potassium permanganate as well as the dose to be used in a case of subacute bacterial endocarditis with a positive *Streptococcus viridans* blood culture. According to the medical literature, various dyes as well as numerous arsenicals have been used in these cases with practically no results. I have at present a case of this nature under my care, and Dr. Henry Lissner of this city has suggested to me the use of potassium permanganate as a possible antistreptococcic agent. I will also mention that at present we are using an autogeneous vaccine both detoxified and one containing the toxin. This is being alternated daily, with the gradual increase in the dose as we go along.

HENRY I. LEVITON, M.D., Los Angeles.

ANSWER.—The intravenous use of potassium permanganate is irrational, as it is immediately reduced on coming in contact with the organic materials of the blood. The most it could do would be to act indirectly by producing a sharp febrile reaction as the result of altered protein. The use of vaccine can easily be overdone. Possibly, small doses given at sufficient intervals to permit the development of a positive immunization phase may be of help. Large or frequently repeated doses are more likely to be harmful. Blood transfusions are advisable when the hemoglobin falls below 60 per cent. When there is cardiac insufficiency, it is wise to restrict fluids for at least twenty-four hours preceding the transfusion, so as not to overburden the heart. In the presence of edema, the preliminary restriction of fluids should last for several days.

HYSTERICAL PARALYSIS DURING PREGNANCY

To the Editor:—A tertipara, five months pregnant, was brought to the local charity hospital with complete paralysis of the lower extremities and with apparently complete loss of sensation; the anal and bladder sphincters were intact. An attempt was made to eliminate malingering or hysteria by ether anesthesia, but the patient went to sleep without an excitement stage. Two neurologists, with the aid of intraspinal injections of iodized oil and the usual other examinations, pronounced the case possible transverse myelitis. The radiologists located (?) the point of pressure. That night the patient got out of bed and walked to the lavatory. The next day she declared that God had cured her. Please give statistics of myelitis associated with pregnancy. What is the cause? What is the prognosis? What is the rapidity of recovery? Please give records of similar cases.

J. M. BODENHEIMER, M.D., Shreveport, La.

ANSWER.—The patient's idea as to what cured her is as good as any one else's. Myelitis as associated with pregnancy is the same as myelitis at any other time. There is no particular type of infection of the cord that is associated with pregnancy, nor are there any pressure changes on the spinal cord which are related with pregnancy. The prognosis is always serious in a myelitis and if a recovery occurs it is, of course, extremely slow. The patient probably had hysteria and in all probability it is not impossible that similar cases have been observed.

COPPER IN ANEMIA

To the Editor:—For certain cases of anemia I should like to administer copper, preferably in an aqueous solution. What salts of copper, aside from the sulphate and arsenite, may be used and what dosage given? Please omit name.

M.D., California.

ANSWER.—Copper and ammonium sulphate were given empirically in doses of from 0.03 to 0.12 Gm. in the treatment of chorea, facial neuralgia, and the anemias that resist iron, long before recent experiments called attention to its possible value in cases of anemia. It has been prescribed dissolved in peppermint water sweetened with syrup. The addition of tincture of opium has been recommended evidently to mask the

symptoms of intolerance. However, the dosage in which it was given is probably excessive and one-tenth the amount might suffice for the purpose, and if this is given well diluted after meals it would probably be well tolerated.

Copper acetate, though not an ideal salt for the purpose because of its acetic acid odor and astringent action, might be employed in doses of from 0.006 to 0.030 Gm. It can be obtained from German apothecaries in this country in the form of a tincture (tinctura cupri acetici) as originally devised by Rademacher, which is employed in doses of from 5 to 15 drops and upward three times daily after meals.

POSTDIPHTHERITIC PARALYSIS

To the Editor:—Kindly suggest treatment for a woman, aged 20, with postdiphtheritic residual palatal and pharyngeal paralysis, and partial paralysis of both legs and the right arm (absent tendon reflexes; sensations normal) of four weeks' duration. Please omit name.

M.D., New York.

ANSWER.—In postdiphtheritic paralysis the treatment is similar to the therapy in all types of neuritis. Once the disease has become stationary the recovery is all a matter of regeneration of damaged peripheral nerves. This takes considerable time and it has been said to be hastened by small doses of strychnine and by galvanic stimulation. Electrical stimulation, massage, and passive motion help to keep the muscles in good nutrition for the return of function when the regeneration of nerves has been accomplished.

In postdiphtheritic paralysis, unfortunately, the damage is not always entirely limited to the peripheral and cranial nerves. Sometimes the toxin acts centrally, in which case regeneration is not to be expected.

PERIPHERAL NEURITIS

To the Editor:—Several people 40 years of age and upward have had legs and had feet, meaning a peculiar burning feeling along the calf of the leg and the soles of the feet, never letting up, as had in the morning as during the day. Tire is omnipresent. Only slight congestion, if any, exists. They may or may not have large veins. Men and women are equally affected. Erythromelalgia would describe it save for the absence of redness. There are no blisters nor ulcers. Hoisting the feet does not bring relief, nor does rest. Salicylates, aperients and diet seem useless. Please omit name.

M.D., Missouri.

ANSWER.—In the absence of any evidence of circulatory disturbance or of local skin irritation, it would seem that the most likely condition to cause the symptoms mentioned would be a peripheral neuritis. Pain and tenderness in the muscles and along the course of the nerves may be accompaniments. The achilles reflex is usually diminished or absent. Chronic intoxications are the commonest causes, including particularly alcohol, arsenic and lead. Diabetes should be excluded. The treatment should be directed to the exciting cause, particularly in the case of metallic poisoning.

PRESCRIBING IODIDE AND BELLADONNA

To the Editor:—What is the best method of prescribing potassium iodide and belladonna in one mixture? Please omit name.

M.D., New York.

ANSWER.—An alkali iodide is likely to be incompatible with alkaloids in aqueous solution. Alcohol, in sufficient amount, generally prevents this incompatibility. As tincture of belladonna has diluted alcohol for its menstruum, it requires alcohol of this strength as its vehicle: an alcohol strength that would also overcome iodide precipitation of most of the alkaloids. With compound tincture of cardamom as a flavor, the following prescription might be suggested:

	Gm. or Cc.
℞ Sodium iodide	5
Compound tincture of cardamom	3
Tincture of belladonna	10
Diluted alcohol, to make	60

M. Label: Teaspoonful in water three times a day after meals.

TREATMENT OF PIGMENTARY NEVI

To the Editor:—Please state the various methods of treating hairy pigmentary nevi. Is carbon dioxide snow safe in the treatment of these cases? Please omit name.

M.D., Ontario.

ANSWER.—Hairy pigmentary nevi are most commonly treated by means of excision, by freezing with carbon dioxide snow, by fulguration or actual cautery, or by radiotherapy.

The use of carbon dioxide snow is generally regarded as a safe method and the cosmetic results obtained by its employment are usually good.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: Written examination for Group III candidates to be held in eighteen cities in the United States and Canada, Oct. 31. *Clinical examination for all candidates.* Chicago, Dec. 29. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

ARIZONA: Phoenix, Oct. 6-7. Sec., Dr. B. M. Berger, 12 N. Central Ave., Phoenix.

ARKANSAS: *Basic Science.* Little Rock, Nov. 2. Sec., Mr. Louis E. Gebauer, 1002 Donaghey Bldg., Little Rock.

CALIFORNIA: *Reciprocity.* Los Angeles and San Francisco, Sept. 18. *Regular.* Sacramento, Oct. 19-24. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, Oct. 6. Sec., Dr. Wm. Whitridge Williams, 422 State Office Bldg., Denver.

CONNECTICUT: *Basic Science.* New Haven, Oct. 10. Address, State Board of Healing Arts, 1995 Yale Station, New Haven.

GEORGIA: Atlanta, Oct. 13-14. Sec., Dr. B. T. Wise, Americus.

IDAHO: Boise, Oct. 6. Commissioner, Hon. Emmitt Pfost, Boise.

ILLINOIS: Chicago, Oct. 13-15. Supt., Mr. Paul B. Johnson, Springfield.

IOWA: Des Moines, Oct. 20-22. Dir., Mr. H. W. Grefe, Capitol Bldg., Des Moines.

MICHIGAN: Lansing, Oct. 13-15. Sec., Dr. F. C. Warnshuis, 1010 Maccabee Bldg., Detroit.

MINNESOTA: *Basic Science.* Minneapolis, Oct. 6-7. Sec., Dr. J. C. McKinley, 126 Millard Hall, Minneapolis. *Regular.* Minneapolis, Oct. 20-22. Sec., Dr. F. J. Engberg, 524 Lowry Bldg., St. Paul.

MONTANA: Helena, Oct 6. Sec., Dr. S. A. Cooney, Power Block, Helena.

NEBRASKA: *Basic Science.* Lincoln, Oct. 6-7. *Acting* Sec., Mr. P. H. Bartholomew, Lincoln.

NEVADA: Carson City, Nov. 2-4. Sec., Dr. Edward E. Hamer, Carson City.

NEW JERSEY: Trenton, Oct. 20-21. Sec., Dr. James J. McGuire, 1101 Trenton Trust Bldg., Trenton.

NEW MEXICO: Santa Fe, Oct. 12-13. Sec., Dr. P. G. Cornish, Jr., 221 W. Central Ave., Albuquerque.

NEW YORK: Albany, Buffalo, New York and Syracuse, Sept. 28 to Oct. 1. Chief, Mr. H. J. Hamilton, Room 315, State Education Bldg., Albany.

RHODE ISLAND: Providence, Oct. 1-2. Dir., Dr. Lester A. Round, 319 State Office Building, Providence.

TENNESSEE: Memphis, Sept. 28-29. Sec., Dr. Alfred B. DeLoach, Medical Arts Building, Memphis.

WISCONSIN: *Reciprocity.* Milwaukee, Oct. 21. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., La Crosse.

WYOMING: Cheyenne, Oct. 5. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne.

Oklahoma June Report

Dr. J. M. Byrum, secretary, Oklahoma State Board of Medical Examiners, reports the written examination held at Oklahoma City, June 11-12, 1931. The examination covered 12 subjects and included 120 questions. An average of 75 per cent was required to pass. Forty-seven candidates were examined, all of whom passed. Six physicians were licensed by reciprocity with other states, 2 were reregistered and 1 was issued a duplicate license. The following colleges were represented:

PASSED		
College	Year Grad.	Number Passed
University of Arkansas School of Medicine	(1929)	1
Northwestern University Medical School	(1930)	1
Rush Medical College	(1931)	1
Harvard University Medical School	(19)	1
University of Oklahoma School of Medicine	(1931)	42
University of Toronto Faculty of Medicine	(1928)	1

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
Southern Medical College, Georgia	(1898)	Tennessee
State University of Iowa College of Medicine	(1929)	Iowa
University School of Medicine and College of Physicians and Surgeons	(1929)	Maryland
Washington University School of Medicine	(1912)	Missouri
Meharry Medical College	(1930)	Tennessee
Baylor University College of Medicine	(1929)	Texas

District of Columbia July Examination

Dr. W. C. Fowler, secretary, Commission on Licensure of the District of Columbia, reports the written examination held at Washington, July 13-14, 1931. The examination covered 6 subjects and included 60 questions. An average of 75 per cent was required to pass. Eighteen candidates were examined, all of whom passed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
Georgetown University School of Medicine (83.8, 88.5, 85.5, 87, 87.5, 89.4	(1930)	81.4
George Washington University School of Medicine (79.2, 82.7, 83.7, 89.4, 92.3	(1930)	78.2
Howard University School of Medicine	(1930)	82.9
University of Maryland School of Medicine and College of Physicians and Surgeons	(1929)	83.2
University of Pennsylvania School of Medicine	(1930)	85.9
Medical College of Virginia	(1930)	79.7
University of Virginia Department of Medicine	(1930)	84

Book Notices

FOOD ALLERGY: ITS MANIFESTATIONS, DIAGNOSIS AND TREATMENT, WITH A GENERAL DISCUSSION OF BRONCHIAL ASTHMA. By Albert H. Rowe, M.S., M.D., Lecturer in Medicine in the University of California Medical School, San Francisco. Cloth. Price, $5. Pp. 442. Philadelphia: Lea & Febiger, 1931.

The subject of allergy is a comparatively new one, and though references to anaphylactic and allergic reactions have appeared in the literature for many years, it is only since the time of Pirquet, who introduced the term allergy in 1911, that real strides have been made. Whereas pollens were formerly considered the main offenders, the rôle of food, thanks to the efforts of many workers, among whom the author has been one of the most assiduous in this country, is looming up with increasing importance. The old saying that what is one man's food is another's poison has never received greater confirmation. Wherever there are smooth muscle fibers and blood vessels, and these are ubiquitous, the manifestations of allergic reaction may be found. Small wonder, then, that difficulties in differential diagnosis between organic disease and allergic reactions of the brain, lungs, gastro-intestinal tract, cardiorenal system and the skin and mucous membranes are becoming more difficult and necessary. The author's experience is extensive and his book is the result of his own work and a wide acquaintance with old and contemporaneous literature. He states that statistics show probable food allergy in upward of 30 per cent of all persons. The resorting to skin tests alone is frequently futile because he as well as others has shown that skin tests may be negative and patients allergic to some foods and vice versa. In the former type of patient the author has been able to obtain successful clinical results with his "elimination diets," which he introduced a few years ago. An inquiry into the family history, reactions to some foods, distaste for others, habits of eating of the mother and the possibility of transmission of sensitization to the fetus in utero or the nursing infant, the occurrence of eczema in infancy, urticaria, localized edema and the effect of exclusion diets, particularly the author's elimination diets, must be searching and complete to make a proper diagnosis and effect a cure of the patient. In all cases, especially in disorders of the gastro-intestinal tract, it is necessary to make a complete physical, laboratory and roentgen examination to rule out any organic lesion. Neither the old nor the young are immune. The author favors the scratch test for general use, employs the intracutaneous method in some patients, and warns against the use of the passive transfer method by any but the specialist. There does not seem to be any necessity for this warning because it is not a difficult procedure. His experience with desensitizing by feeding minimal amounts of food have been disappointing. He uses digestants, acids and peptone in conjunction with diets in many instances. Several pages are devoted to a description of his diets, the manner of their preparation, elaboration of menus and classifications of foods by others. These are excellent and should be of considerable value to the novice in particular. The author does not believe that food asthma has been accorded its proper place. The hackneyed and meaningless phrase intestinal autointoxication has been replaced by what may be a more accurate one—allergic toxemia. While the author's description of the pathogenesis of migraine seems interesting and an allergic element may be present in many instances, it does not always fill the bill. Too frequently the workers in a new field ride a hobby too strenuously. The list of disorders mentioned that might be of allergic origin would make a catalogue of almost all known diseases. No doubt the list in which allergy plays a part is big and will undoubtedly increase with increasing knowledge of the subject; but care must be taken not to be carried away by it. The author lays particular stress on the importance of food allergy, although he does not minimize the importance of pollens. He does not have much sympathy for the value of heat and cold as the cause of allergy. There is an extensive bibliography. The book is well written and full of information. Every one practicing medicine should acquaint himself on this new and all absorbing question. While the author may appear enthusiastic about his "elimination diets," his work can be recommended to any student of the subject.

BERÄTTELSE FRÅN STYRELSEN FÖR CANCER-FÖRENINGEN I STOCKHOLM ÖVER VERKSAMHETSÅRET 1930. Paper. Pp. 80. Stockholm: K. L. Beckmans Boktryckeri, 1931.

This is the latest annual report of the association that supports and controls Radiumhemmet in Stockholm for the treatment of cancer. The part of the report that deals with the affairs of the association and the general activities of Radiumhemmet is in Swedish, but the last half of the report consists of tabular reports of cases treated and followed up during the year 1921-1930. Table 1 summarizes the results of the cases radiologically treated and followed up during 1921-1930. Table 2 gives the cases treated with endothermy and desiccation during 1930. Tables 3 and 4 give the results of the treatment of all cases of cancer of the cervix and of the body of the uterus during 1921-1930. These tables are well constructed, the headings are in English, and the large and varied information conveyed will interest all who are concerned with the treatment of cancer. The suggestion is ventured that it will be of a great advantage if in future reports the parts dealing with the general problem of cancer and its treatment are printed in English.

THE RENAL LESION IN BRIGHT'S DISEASE. By Thomas Addis, Professor of Medicine, Stanford University, and Jean Oliver, Professor of Pathology, Long Island College of Medicine. Cloth. Price, $16. Pp. 628, with 192 illustrations. New York: Paul B. Hoeber, Inc., 1931.

This monograph, written conjointly by a clinician and a pathologist, represents a further attempt to correlate clinical and pathologic facts. The work is done with the hope that the nature and extent of the renal lesion might be ascertained by quantitative studies of the urinary sediment and of the amount of functioning renal tissue. It is a summary of observations carried out on seventy-two patients and collected over a period of ten years, the history-taking, physical examinations and quantitative studies being performed by the clinician himself. The experimental work leading up to the development of Addis's new methods is reviewed. Only the morphologic changes of the urinary sediment, he concludes, will enlighten us on the nature of the lesion. The fact that casts disappear from urine by lowering the specific gravity, by lowering the concentration of sodium chloride and by increasing the *Pu*, and that red blood corpuscles diminish in number as the concentration of sodium chloride is also reduced, explains the heretofore lack of constancy between the renal lesion and the urinary sediment. These factors of error are obviated by having the patient abstain from water during the daytime and collecting the twelve hour night urine. The protein content of such a specimen is determined, the number of casts, red blood cells, white and epithelial cells are counted on a hemocytometer, and the results expressed as twelve hour rates; and the percentage of the different types of casts is studied. In the urine of apparently healthy adults, Addis found protein, casts, and red, white and epithelial cells. In consequence the finding of more than 30 mg. of protein and more than 5,000 casts each twelve hours is defined clinically as Bright's disease.

To determine the extent of the renal lesion, he has developed a technic for the "blood urea clearance test," which is defined as the volume of blood freed of urea by the kidney per unit time (one hour) and which is expressed as the ratio $\frac{\text{rate of urea excretion}}{\text{blood urea concentration}}$. The rationale underlying the formulation of this test and the factors of variability are discussed. Tables are given indicating how, by refinement of the details of the test, these factors have been greatly diminished. There is a constant relation between this measure of function and the weight or amount of functioning tissue. It is of particular utility in patients with 50 per cent or more functioning renal tissue, when the usual methods give negative or uncertain results. With less than one third of the functioning tissue it is unnecessary, the blood urea concentration alone being of sufficient value. Cardiac failure or a high diastolic pressure contraindicates its use.

The urine volume quotient $\frac{\text{maximum urine volume}}{\text{minimum urine volume}}$ is shown by Addis to be more closely correlated with the amount of functioning renal tissue than either polyuria after fluid restriction or oliguria after water consumption. Determinations of the specific gravity on consecutive urine specimens over a twenty-

four hour period has no precise meaning except when extremely low figures are obtained. Although the specific gravity of a twelve hours' night urine, while the patient is on a dry diet, may sharply differentiate health and disease, "too many uncertainties are involved." He accepts a blood urea of from 40 to 50 mg. per hundred cubic centimeters as the upper limit of normal, provided there is no toxic destruction of body protein or state of renal inactivity, when high values in the presence of a normal amount of functioning renal tissue may obtain. When less than 40 per cent of renal tissue remains, urea values exceed the normal, subsequent increases indicating further damage, except when in the state of uremia.

The following clinical classification based on studies of the morphology of the urinary sediment is offered by Addis: 1. Hemorrhagic Bright's disease divided into initial, latent, active and terminal stages. 2. Degenerative Bright's disease—cryptic, pyogenic and nonbacterial forms, including the "genuine nephrosis." 3. Arteriosclerotic Bright's disease, including the malignant sclerosis of Fahr. The characteristics and course of each type are lucidly described.

The methods employed by Oliver in his studies are described in detail. Definitions of the various pathologic states, as cloudy swelling, fatty degeneration, sclerosis of the glomeruli, glomerulitis, arteriosclerosis and metallaxis, descriptions and photographic representations of their microscopic appearances and various relevant theoretical and experimental considerations are reviewed.

A large section of the book is devoted to the observations of the cases studied. The pertinent clinical details are given, followed by a description and summary of the pathology and accompanied by excellent small and large scale photomicrographic illustrations of the typical lesion. The different types and stages of disease are adequately represented. There appears to be a striking correlation between the clinical and the pathologic observations.

From a comparison of the clinical and pathologic data, Addis concludes that glomerulitis is always present in hemorrhagic Bright's disease and never in the degenerative or arteriosclerotic form. In the degenerative type, degeneration is the only constant lesion; in the arteriosclerotic type, arteriosclerosis or endarteritis and interstitial proliferation are the only constants.

Oliver summarizes the average type histologic picture of the different forms of the disease and gives a theoretical description of the sequence of the pathologic processes. After discussing the various classifications and concluding in favor of Addis's as the most useful, he propounds a theory that "Bright's disease is the response of the kidney to alterations in its environment, especially to the irritation of toxic substances." Variations in the reactions of the individual tissues account for the complexity of the disease. "Differences in the 'nature' of the poisonous substance" are of secondary importance. The monograph is concluded by a series of beautiful drawings of selected lesions illustrative of different types of the disease.

The subject matter is well arranged and is written in a clear style. The book is worthy of the prodigious labor entailed in the accumulation of the various data and, because of its particular appeal to the clinician, should enjoy a wide distribution.

RHEUMAPROBLEME. Band II: Gesammelte Vorträge, gehalten auf dem II. Ärztekursus des Rheuma-Forschungs-Instituts am Landesbad der Rheinprovinz in Aachen vom 23. bis 25. Oktober 1930. Von Prof. Dr. Assmann, Prof. Dr. Bieling, Prof. Dr. Boehm, Prof. Dr. Bruhn, usw. Paper. Price, 12 marks. Pp. 176, with 72 illustrations. Leipzig: Georg Thieme, 1931.

This small volume represents a second publication in German of collected addresses delivered by a series of students of the rheumatoid problem at the (second) course for physicians held under the auspices of the institute for the study of rheumatism at Aachen, Germany, in October, 1930. The topics covered by fifteen contributors are pathogenesis, experimental production of chronic infectious arthritis, acute and subacute joint inflammations with their roentgen pictures, the stomatologic aspects of the hospital work of the future, differential diagnosis of rheumatism in children, a consideration of rheumatic diseases, the therapeutic management of infectious arthritis, infectious diseases and the rheumatic syndrome in the light of focal infection, so-called rheumatic vertebral column diseases, the heart and chronic rheumatism, cooperation of dentists in the prevention and treatment of rheumatic diseases, present concept of the etiology of infectious rheumatism, biologic bases of joint disturbances, nutrition and nutritive disturbances in their relation to so-called rheumatism, and the endocrines and joint diseases. The most significant feature of the present volume is that it marks the heightened and sustained interest being manifested in Europe in the arthritis problem, no less on the continent than in England. With the exception of a few articles, the present brochure is somewhat more clinical than was the previous one. It reflects to a great extent the influence of American work in this field. A number of articles are devoted primarily to bacteriologic considerations. There is small doubt that Europe in general has lagged behind America in appreciating the avowed influence of focal infection in the production of disease at large. Medical thought in Europe, however, has never followed the extreme dictates which some advocates of focal infection have here enunciated. While Europe has probably much to learn from America regarding the meticulous technic developed here for diagnosis and therapy in this field, the European point of view concerning the rheumatoid problem has been and still is wider angled than usually obtains here. Thus, in the present volume two of the most important articles are probably that by Müller of Königsberg on the biologic cases of joint disturbances and that by Strauss of Berlin on nutritive disturbances in their relation to so-called rheumatism. In the former article, the author emphasizes the inherent biologic properties of the joint tissues and states that joint changes induced by functional and mechanical forces constitute a large part of those changes which we choose to designate "arthritis deformans." The concluding article on endocrines and joint changes, by Tannhauser of Freiburg, also develops the importance of seeing the problem of arthritis whole. Bieling of Frankfort-on-Main in his article, the third, on experimental production of infectious arthritis does not consider the theory of elective affinity proved. A perusal of this work by those who know German will reveal the importance with which the rheumatoid problem is regarded as well as the emphasis placed by an increasing number of workers on the underlying as well as the precipitating causes of the disease.

ALIMENTARY ANAPHYLAXIS (GASTRO-INTESTINAL FOOD ALLERGY). By Guy Laroche, Charles Richet, Jr., and Francois Saint-Girons. Foreword by Professor Charles Richet, of the Faculty of Medicine of Paris. Translated by Mildred P. Rowe and Albert H. Rowe. Preface by Albert H. Rowe. Cloth. Price, $2. Pp. 139. Berkeley: University of California Press, 1930.

The preface to this book is written by the translater and is in effect a review. The senior Richet wrote the foreword and says that it is a treatise on experimental and clinical observation of anaphylaxis. The term anaphylaxis is used throughout instead of the word allergy. The authors call attention to the fact that everything but water and sugar is capable of producing anaphylaxis. This may appear from a few seconds to several minutes after ingestion. Eggs, milk and wheat lead the list. This conforms to the observations of American writers on the subject. They describe severe, mild, chronic and hereditary types of anaphylactic reactions. They agree with Wells and Osborne, who worked with vegetable proteins, that anaphylaxis is the first stage of immunity. The vomiting that occurs in some cases is a protective mechanism. There are several points of interest in the consideration of pathogenesis. Some of the ingested protein is not broken down and enters the blood stream and becomes toxicogenic in an individual who has already been sensitized by the ingestion of the same type of food at some previous time. The factors that play a part in the development of anaphylaxis are thought to be excessive alimentation, insufficiency of the digestive juices, a spontaneous or induced lesion of the intestine, hepatic deficiency, and possibly a disturbance of the vagosympathetic and endocrine systems. The daily ingestion of the same food substance after an attack of anaphylaxis leads to immunity. Other theories mentioned are those of formation of precipitins and the physical theory originally formulated by Besredka. There is no discussion of skin tests mentioned because the authors state that too many descriptions of these have already appeared in the literature to warrant their being taken up here. They believe that the etiologic factors are more important in the diagnosis than the symptoms. The use of passive anaphylaxis, or passive transfer as it is better known, is used more than is the search for precipitins in

the blood. The treatment recommended is some form of elimination diet, stimulants in case of shock and peptone in small doses before mealtime. They give the impression that the feeding of small amounts and in increasing quantities may eventually lead to immunity against anaphylaxis to this food. This book is an excellent introduction to the subject of food allergy, is interestingly written, presents many illustrative case histories, and deserves to be read by any one desiring information on the subject. The translators have done their work well. Further elaboration of this subject has been presented by the translators in their recent work on food allergy.

Immunität, Allergie und Infektionskrankheiten: Praktische Ergebnisse der wissenschaftlichen Forschung und klinischen Erfahrung. Herausgegeben von Rudolf Degkwitz, Erich Leschke, Hans Schlossberger, Georg Schröder und W. Storm van Leeuwen. Schriftleitung: Fr. Michelsson. Band III, Heft 1-3, Sonderheft: Die epidemische Kinderlähmung. Von Prof. C. W. Jungeblut, Oberregierungsrat Dr. E. Roesle, usw. Paper. Price, 8 marks. Pp. 132, with illustrations. Munich: Verlag der Ärztlichen Rundschau, Otto Gmelin, 1931.

This is a separate issue of numbers 1-3 of volume 3 of Immunität, Allergie und Infektionskrankheiten, which is devoted to the presentation of the practical results of scientific investigation and clinical experience. The newer results of the investigation of infantile paralysis are reviewed by C. W. Jungeblut and R. Thompson in New York. E. Roesle, Berlin, discusses the statistics of infantile paralysis. C. Levaditi, E. Schmutz and L. Willemin report the results of their study of an epidemic of infantile paralysis in Alsace in June-September, 1930. Diagnosis is discussed by de Rudder, abortive cases by A. Lichtenstein, the clinical picture and general treatment by P. Bamberger, serum treatment in general by R. W. Fairbrother, and the experiences with convalescent serum in Canada by H. Schlossberger. The final section by P. Ritzen deals with the orthopedic treatment of the results of infantile paralysis. The book contains a good review of our present knowledge of infantile paralysis, its diagnosis and treatment.

Resistance to Infectious Diseases: An Exposition of the Biological Phenomena Underlying the Occurrence of Infection and the Recovery of the Animal Body from Infectious Disease, with a Consideration of the Principles Underlying Specific Diagnosis and Therapeutic Measures. By Hans Zinsser, M.D., Professor of Bacteriology and Immunity, Medical School, Harvard University. Fourth edition. Cloth. Price, $7. Pp. 651, with illustrations. New York: Macmillan Company, 1931.

The former title of this book was "Infection and Resistance." The author regards the new title as more accurately descriptive of the scope and purpose of his book; namely, the consideration of immunologic theories and methods in their relation to the diagnosis and treatment of infectious diseases. The first part, which deals with the principles of infection and immunization, prepares the way for the second part, which deals with the practical immunologic problems of individual infectious diseases. The remarkable advances since the previous edition appeared eight years ago in the knowledge of the structure of antigens, of antigen-antibody reactions and of bacterial biology are discussed fully and clearly. The chapters on anaphylaxis have been rewritten and rearranged on the basis "of the belief that anaphylaxis to problems in animals and all the forms of human idiosyncrasy are basically related in mechanism." Generally speaking, the revision brings the book well down to date. The book will retain its standing as a helpful and stimulating guide in its field. The style is clear and fluent with a bent toward diffuseness; in places it suggests undue haste in writing. The illustrations are not at all commendable and the index has not been revised as thoroughly as the text.

The Second Oldest Profession: A Study of the Prostitute's "Business Manager." By Ben L. Reitman, M.D. Cloth. Price, $3.75. Pp. 266. New York: Vanguard Press, 1931.

This is a discussion of the lives of men who live on the earnings of prostitutes. Because prostitution has been characterized as the oldest of professions, the author characterizes this type as the second oldest profession. The book has not the slightest scientific value. It rather glorifies the creatures it discusses and may be considered altogether an unwarranted and impossibly bad book. It is without literary style and represents smoking room gossip more nearly than it does literature or science.

Medicolegal

Appendicitis, Trauma and Workmen's Compensation

(Hanson v. Independent School Dist. (Idaho), 294 P. 513; Industrial Commission v. Diveley (Colo.), 294 P. 532)

In *Hanson* v. *Independent School Dist.* (Idaho), 294 P. 513, a proceeding under the workmen's compensation act of Idaho, the employee was the driver of a school bus. In places the road over which he traveled was rough. In October, 1928, he noticed that the jolting and jerking of the bus produced severe pains in his abdomen. October 19, an unusual jolt gave him a sudden severe burning pain, like a flash, in his right side. On returning to the school house, he was unable to perform his usual duties as a janitor. The next day he remained in bed, suffering extreme pain. October 22, he was operated on. His appendix had ruptured and torn loose from the place of attachment to the cecum. General peritonitis had developed. A fecal concretion was found, which had evidently been forming for some months. About six weeks after the operation, empyema developed. His pleural cavity was opened and drained and later a rib resection was done. According to the evidence, an abscess developed under the liver, which ruptured through the diaphragm. At the time of the hearing, Aug. 23, 1929, the patient had a ventral hernia and was still confined in the hospital. The industrial accident board denied compensation, and from a judgment of the district court reversing the order of the board an appeal was taken to the Supreme Court of Idaho.

The industrial board, in denying compensation, acted apparently on the theory that the disability suffered by the employee would have arisen regardless of the jolting and jarring and that the accident did not cause, but merely aggravated, a preexisting disease or condition, which was active and progressive at the time of the accident. A finding by the board, said the Supreme Court, that the accident aggravated or accelerated a preexisting disease or condition is not sufficient. The board must specifically find whether there was an accident and, if so, whether it did or did not proximately cause the injury—that is, the ruptured appendix and serious consequences. The presence of a previous disease or weakened condition is immaterial. If the employee's injuries resulted partly, but not entirely, from the alleged accident, it is the duty of the board to separate the results of the preexisting disease or weakness from those of the alleged accident and injury and to apportion the award accordingly. The finding of the board, continued the court, that the "aggravation was not any different or of any greater extent than might have been caused by any other physical activity the plaintiff might have engaged in" is not sufficiently to the point. It is not a question of whether other activities might have caused the injury, but whether the activity, if the board finds it to be an accident causing the injury, was engaged in as a part of the employee's duty. The judgment of the district court was reversed and the cause remanded to the industrial board for further action.

In *Industrial Commission* v. *Diveley* (Colo.), 294 P. 532, a proceeding under the workmen's compensation act of Colorado, the employee was a night watchman. During the early part of the night of August 15 he cleaned a boiler. In doing so he climbed up about ten feet on a ladder to remove the manhead, which weighed approximately 100 pounds, carried it down the ladder to the floor, and then carried it up again to replace it. In doing this he suffered severe pains in his abdomen. He was removed to his home, but no physician was called. He recovered to some extent and returned to his work the following night. There was a recurrence of the severe pain during the night, however, and again he had to be taken home. A physician was called, and the employee was immediately removed to a hospital, where an appendectomy was done on the following morning. The appendix had already ruptured and death occurred from peritonitis. The industrial commission denied compensation, in an action instituted by the widow. The Supreme Court of Colorado sustained the action of the commission.

The medical testimony, said the Supreme Court, was to the effect that a strain might accelerate a rupture of the appendix

in a person suffering with acute appendicitis but that a strain could not of itself cause acute appendicitis. Prior to the accident, the employee was physically strong and never suffered from any physical ailment. There was no evidence that he had previously suffered from either chronic or acute appendicitis. It was testified that, irrespective of any injury, the appendix might have ruptured at the exact moment it did, and the record left a doubt as to whether or not the accident had any direct causal connection whatever with the condition from which the employee died. The claimant, the widow of the employee, said the court, proved both the accident and the cause of death, but there rested on her the additional burden of proving the causal connection between them. On the question of causal connection, the evidence was conflicting and, concluded the court, the award of the industrial commission, based on conflicting testimony, cannot be disturbed by the courts.

Medical Practice Acts: Advertising to Treat Diseases of the Prostate Not Unlawful.—The California medical practice act provides that a license to practice medicine may be revoked or rescinded, or the holder placed on probation, if he advertises that he will treat any venereal disease or "any person or persons for any sexual disease, for lost manhood, sexual weakness, or sexual disorder or any disease of the sexual organs." The respondent, a licensed physician, inserted an advertisement in a newspaper wherein he offered to treat diseases of the prostate. The board of medical examiners found respondent guilty of a violation of the medical practice act and placed him on probation for five years. The evidence produced before the medical board, said the district court of appeal, second district, division 2, of California, showed that there are diseases of the prostate which are not in any sense venereal diseases or diseases of the sexual organs. The fact that the respondent used the word "prostate" in his advertisement cannot be said to be the equivalent of advertising concerning the matters prohibited by the medical practice act. The fact that the prostate may have some of the diseases against which the act is directed does not preclude a physician from advertising treatment of that organ. The district court of appeal could find no evidence justifying the action of the board in finding the respondent guilty.—*Randall v. State Board of Medical Examiners (Calif.), 293 P. 790.*

Evidence: Opinion as to Cause of Rupture of Aorta Admissible.—The defendant, after conviction of murder, contended on appeal that it was error to permit a physician who testified concerning an autopsy that he had performed to give his opinion as to the cause of the rupture of the aorta, which was among the pathologic conditions found. He contended that the witness could give such an opinion only in answer to a hypothetical question stating all the facts on which the opinion was based. But, said the Supreme Court of Wisconsin, the witness had testified fully as to the conditions he had found and there was no dispute whatever as to those conditions. His answer was manifestly based on the facts disclosed by his own examination as stated by him to the jury. In this situation a hypothetical question would have been useless and senseless. Although the defendant's testimony was not in when the physician gave his opinion, if there was anything that the defendant's counsel intended to prove that could affect the physician's opinion, counsel could have put a hypothetical question including such matters, if he so desired.—*La Vine v. State (Wis.), 233 N. W. 549.*

Evidence: Chiropractor as an Expert Witness.—An expert is one possessing, with reference to a particular subject or department of human activity, knowledge not acquired by ordinary persons. A person who is neither a physician nor a surgeon, but who is a graduate from a chiropractic school giving a three years' course and who is licensed under the state laws to practice as a chiropractor, may testify concerning injuries of the human vertebrae, the possible cause of such injuries, and their probable duration. Whether the witness was correct in his diagnosis, said the Supreme Court of Oklahoma, and in his conclusion as to the probable result of them, was a question for the jury.—*Oklahoma Natural Gas Corporation v. Schwartz (Okla.), 293 P. 1087.*

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, St. Louis, Nov. 4-6. Dr. Louis J. Mitchell, 29 E. Madison Street, Chicago, Secretary.
American College of Surgeons, New York and Brooklyn, October 12-16. Dr. Franklin H. Martin, 40 East Erie St., Chicago, Director-General.
American Congress of Physical Therapy, Omaha, October 5-8. Dr. F. L. Wahrer, 22 South Center Street, Marshalltown, Iowa, Secretary.
American Roentgen Ray Society, Atlantic City, September 22-25. Dr. John T. Murphy, 421 Michigan Street, Toledo, Ohio, Secretary.
Associated Anesthetists of the United States and Canada, New York, October 12-16. Dr. F. H. McMechan, 770 Westlake Road, Avon Lake, Ohio, Secretary.
Delaware, Medical Society of, Wilmington, October 13. Dr. W. O. La Motte, Medical Arts Building, Wilmington, Secretary.
Idaho State Medical Association, Boise, September 29-30. Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.
Indiana State Medical Association, Indianapolis, September 23-25. Mr. T. A. Hendricks, 23 East Ohio Street, Indianapolis, Executive Sec'y.
Interstate Postgraduate Medical Association of North America, Milwaukee, October 19-23. Dr. W. B. Peck, 12½ East Stephenson Street, Freeport, Ill., Managing Director.
Kansas City Southwest Clinical Society, Kansas City, Mo., October 5-10. Dr. Joseph E. Welker, 906 Grand Avenue, Kansas City, Mo., Secretary.
Michigan State Medical Society, Pontiac, September 22-24. Dr. F. C. Warnshuis, 148 Monroe Avenue, Grand Rapids, Secretary.
Oregon State Medical Society, Eugene, October 22-24. Dr. F. D. Stricker, Oregon Building, Portland, Secretary.
Pennsylvania, Medical Society of the State of, Scranton, October 5-8. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh, Secretary.
Vermont State Medical Society, Rutland, October 8-9. Dr. William G. Ricker, 31 Main Street, St. Johnsbury, Secretary.
Virginia, Medical Society of, Roanoke, October 6-8. Miss Agnes V. Edwards, 104½ West Grace Street, Richmond, Secretary.
Western Branch of American Urological Association, San Francisco, Nov. 6-7. Dr. H. W. Howard, 193 Eleventh St., Portland, Ore., Sec'y.

THE ASSOCIATION FOR THE STUDY OF ALLERGY

Ninth Annual Meeting, held at Philadelphia, June 8 and 9, 1931

The Pollen Allergen

DR. J. H. BLACK, Dallas, Texas: Since the suggestion of Meltzer that asthma in man bore a striking resemblance to the anaphylactic reaction in the guinea-pig, many workers have believed that the "allergic" conditions were anaphylactic phenomena. Others, because of certain differences in the mechanism underlying the reactions, have insisted on some other designation. However, there has been general agreement that the substance causing the reaction in allergy, like the sensitizing agent in anaphylaxis, must be protein. To this assumption there have been few dissenting voices.

The work of Grove and Coca and of Black raised some doubt as to the protein nature of the pollen allergen (atopen) and work in other directions has indicated the possible immunologic importance of nonprotein substances; particularly carbohydrate complexes. The finding of specific carbohydrates in bacteria capable of uniting with preformed antibodies, the demonstration that antibody specificity might be determined by carbohydrate radicals attached to protein and used as antigen, the evidence that anaphylactic reactions may be induced by injection of carbohydrate material and that anaphylactic animals may be desensitized by carbohydrate complexes have all strengthened the belief that substances other than protein may excite the allergic reaction.

A carbohydrate substance has been found in ragweed pollen which reacts specifically, giving positive skin reactions in ragweed-sensitive persons and no reaction in nonsensitive individuals. Instilled into the nostril of ragweed-sensitive persons, it produces the typical hay-fever syndrome. This finding adds evidence that the active fraction of pollen may not be protein.

The Mechanism of an Asthmatic Attack in Chronic Allergic Asthma

DR. BERNHARD STEINBERG, Toledo, Ohio: Bronchospasm is assumed by many investigators to be the principal mechanism in the production of an asthmatic attack. It is admitted that mucous secretion may play a part. Evaluation of the known facts raises doubts that bronchospasm is the dominant factor in the production of an asthmatic attack. Three general methods were employed in the examination of the problem: (1) study of the living asthmatic patient, (2) interpretation of the

postmortem material of people dying during an asthmatic attack, and (3) indirect animal physiologic experimentation.

Intrabronchial introductions of iodized oil were made in patients free from an attack, prior to, during and after an asthmatic attack. The roentgenologic observations were correlated with animal experiments. A part of the bronchial tree in patients free from an asthmatic attack for some time showed occlusion of the bronchial lumens. With the advent of an attack the bronchi continued to show an increasing obstruction, and during the attack the greater part of the bronchial tree was completely occluded. It was observed that in one patient only one lung was involved (the bronchi were obstructed) while the other lung was free. Correlation of these results with the conditions found in the postmortem material reveals that patients who died during an asthmatic attack have a closure of most of the bronchial tree by mucous plugs. These mucous plugs in some bronchi are firmly adherent to the bronchial wall, denoting that obstruction existed for a long time. Other bronchi contain mucous plugs which are easily expelled; apparently these plugs are only of recent origin. The postmortem observations denote that the bronchial plugging observed following injections of iodized oil was due to a mucous secretion. A part of the bronchial tree is completely closed even when the patient is free from asthmatic attacks. It was further interpreted that if bronchoconstriction exists this phenomenon is of only short duration and is probably present in only certain types of asthmatic attacks. The principal factor in an asthmatic attack is a hypersecretion of mucus which begins in the prodromal stage of the attack and continues until the plugging of the greater part of the bronchial tree is accomplished, at which time the attack reaches its maximum intensity.

Animal experimentation showed that bilateral vagus stimulation produces an effect unlike that of a partial or complete sudden bronchial obstruction. Gum tragacanth followed by iodized oil was introduced into the bronchi of animals. These indirect physiologic experiments helped to confirm the interpretations made from study of the living asthmatic patient and the postmortem observations.

Distribution of Reagins in the Blood Plasma

DR. E. L. SHERRER, Cleveland: In 1921, Prausnitz and Küstner demonstrated substances circulating in the blood which are related to the positive skin test in hypersensitive individuals. These substances have been termed reagins. By means of dialysis and precipitation with sodium and ammonium sulphates, the plasma of hypersensitive individuals in whom skin tests were positive was separated into various fractions. These fractions were then tested by passive transfer for the presence and the amount of reagins contained in each. The globulins contained all the reagins; the albumins and the dialysable portion of the serum did not contain any reagins. When the globulins were separated by fractional precipitation into euglobulin, pseudoglobulin I and pseudoglobulin II, the major portion of the reagins were found in the pseudoglobulin I and pseudoglobulin II fractions. The stronger reaction was obtained in the pseudoglobulin I. When the concentration of the reagins is high, they are found to be more diffusely distributed in the globulin fractions. If these protein fractions are considered to be entities, it would appear that the reagins are not specific protein substances but rather substances adsorbed in the globulins. These observations parallel those of other workers in regard to the association of immune bodies with the globulins and the association of the positive Wassermann reaction with the globulins.

The Effect of Allergy on Allergen Absorption

DR. MILTON B. COHEN, E. E. ECKER, PH.D., and DR. JACK A. RUDOLPH, Cleveland: In a previous report concerning the rate of absorption of ragweed pollen material from the nose, we have conclusively shown that an increased resistance exists toward the absorption of alien protein through the mucosae of allergic subjects. A similar phenomenon has also been described by Brunner and Walzer. We further demonstrated the presence of the allergen in our subjects for a period of at least twenty-four hours but not of the forty-eight hours following the administration of the protein. In our present study we attempted to discover whether or not a similar delayed absorption exists in allergic subjects when the protein is introduced by the subcutaneous route. Eleven allergic subjects were given a subcutaneous injection of a mixture of the giant and short ragweed pollen extracts. All the subjects received on the day before the injection an intracutaneous injection of the serum of a highly sensitive subject. Of the eleven subjects only three gave a wheal in forty, forty and fifty-four minutes, respectively. The others failed to react in periods varying from sixty to ninety-five minutes. Of twelve control and normal subjects, eleven reacted in from between thirteen to twenty-four minutes and one in forty-three minutes. These results again indicate that the same difference exists between the allergic and the nonallergic subjects when the protein is introduced by the subcutaneous route.

Protein Hypersensitiveness in Mother and Child

DR. BRET RATNER and JANET E. GREENBURGH, B.A., New York: It is known that hypersensitive animals can transmit their own hypersensitive state to their offspring by way of the placenta. This transfer of hypersensitivity is passive in nature and persists only for about two and a half months. Further experiments show that guinea-pigs can be actively sensitized in utero as the result of the passage of unchanged proteins from the mother's circulation to that of the fetal circulation, the fetus thereby developing its own antibodies. This state of active sensitization may persist indefinitely and is carried over into the second generation through further placental transfer. A correlation of these experimental studies has been made in seeking an explanation for the sensitization of the human infant in those instances in which a mother, eating excessively of protein foods during the latter months of pregnancy, may apparently sensitize the fetus in utero and the child manifests allergic syndromes when coming in contact with such foods for the first time. In these cases the mother herself is not sensitive.

In this communication we present another side of the picture wherein both mother and child are sensitive to identical proteins, which indicates that the human offspring, in such instances, is passively sensitized. A striking case was that of a mother who suffered from asthma, eczema and hay-fever who was shown to be sensitive to wheat, egg, veal and horse dander. The sensitivity of the child to veal protein, of which the child had never partaken, strongly supports the idea that veal antibodies have been transferred from the mother's circulation to that of the child. Skin sensitizing antibodies were transferred both from the mother's blood and from the child's blood to normal recipients and, further, it was possible to sensitize guinea-pigs by the passive transfer of the mother's blood into these animals. The passage of identical hypersensitivity from a mother to her child does not occur with great regularity and does not affect all the children of the same mother.

We believe that the mechanism of congenital hypersensitiveness depends on placental permeability and may be the result of the passage either of antigen from a nonsensitive mother to her susceptible fetus or of sensitizing antibodies from an allergic mother to a susceptible offspring.

Skin Reactions with Staphylococcus Aureus

DR. ISADORE PILOT, Chicago: Sterile broth filtrates of *Staphylococcus aureus* produce a skin reaction when injected intradermally in the forearm of man. Various strains will yield filtrates giving reactions comparable to a Dick test in dilutions of from 1:250 to 1:1,000 in from 42 to 56 per cent of persons. A composite filtrate of ten strains gave reactions in 48 per cent. Rabbit and horse antiserums produced by injections of the filtrates will neutralize the skin reaction in 1:50 or 1:100 dilutions of serum. Injections of undiluted filtrate in sensitive persons will cause a disappearance of the skin reaction. Patients with active acute or chronic infections with *Staphylococcus aureus* react in a higher proportion (89 per cent). Vaccines of *Staphylococcus aureus* produce a reaction in 89 per cent of the patients, which does not always parallel the filtrate tests. Serums from patients giving negative skin reactions neutralize the filtrates in certain dilutions. The skin sensitivity is not transferable passively. New-born infants give no reactions to filtrates or vaccines, although mothers are more sensitive than the average person. Older infants, from the sixth to the twelfth month, give positive skin reactions. It is

unsettled as yet whether these reactions may be due to exotoxins or may be entirely allergic in character, or perhaps due to both.

A Dry Pollen Ophthalmic Test in Patients with Pollen Asthma and Hay-Fever Negative to Cutaneous Tests

DR. M. MURRAY PESHKIN, New York: Almost all workers in allergy have stressed the cutaneous tests (scratch and intradermal technics) as the sole means of determining the exciting or causative factor of pollen sensitiveness. In fact, it is generally agreed that if these tests to pollen are entirely negative it is improbable that the case in question is one of pollen sensitivity. There exists, however, a significant number of patients with typical pollen asthma and hay-fever in whom the results of the sensitization skin tests are negative. As a means of confirming the diagnosis of pollen allergy in this group of patients, an eye test with dry pollen is advocated.

The dry pollen eye test is employed for patients with negative cutaneous tests in whom the etiology of asthma and hay-fever is obscure and a history suggests possible pollen etiology. The test, when properly employed, is simple and harmless. A quantity of pollen equal to the amount used for a scratch test is dropped into the conjunctival sac. After five minutes the pollen residue is removed from the eye. Positive reactions range from one to four plus. Positive reactions are cleared or controlled with one or two drops of epinephrine hydrochloride (1:1,000). Traumatic and "ophthalmographic" reactions are encountered. These false reactions are readily differentiated from the positive reactions.

The degree of reaction of a positive eye test bears no relationship to the severity of symptoms or type of pollen syndrome that a patient may have. However, a majority of patients who are refractory to the cutaneous tests suffer from pollen asthma with or without hay-fever. In other words, only a small number of patients with uncomplicated hay-fever show negative cutaneous reactions with pollen.

The main purpose of the ophthalmic test with dry pollen is to determine, not the degree of sensitivity, but, rather, the absence or presence of sensitization when skin sensitization is absent. An extensive clinical experience covering a period more than nine years on a large number of patients tested during all seasons of the year and under varied conditions supports the statement that the dry pollen eye test will prove to be a useful contribution to the subject of allergy.

Meteorological Aspects of the National Ragweed Pollen Problem. Abstract

O. C. DURHAM, Indianapolis: Pollen slides have been exposed in all sections of the United States through the cooperation of the United States Weather Bureau. During the past six years, atmospheric ragweed pollen studies have been made in 112 localities, including 53 cities, in 29 states, the District of Columbia and 4 Canadian provinces. The meteorological factors discussed and evaluated are, in the order of their relative importance, rainfall, wind, sunshine, humidity and temperature. Ideal conditions for heaviest ragweed pollen production are an average summer temperature of from 70 to 80 F. and a total spring and summer rainfall of from 10 to 25 inches. Ideal conditions for maximum pollen ripening and transport are dry sunshiny weather with occasional rains only at night, high winds, low humidity, and a temperature considerably above 50. Barometric pressure is associated in a definite way with the fluctuation in the weather factors discussed. Since it is through a study of the movement of low pressure disturbances that short time weather predictions are made, it is possible by the same means to predict fluctuation in pollen distribution. By careful study of the daily weather map and forecast the physician may anticipate the periods of greatest personal discomfort to hay-fever sufferers.

Maximum Dosage in Pollen Therapy

DR. GRAFTON TYLER BROWN, Washington, D. C.: Provided extracts of the causative pollens are used, the results in the treatment of seasonal hay-fever or pollen asthma are directly proportional to the size of the maximum dose attained before season. By gradually working up to large enough preseasonal doses, namely, from 60,000 to 100,000 pollen units, failures are eliminated from hay-fever therapy, and perfect results are practically assured. To administer such strong doses, it is necessary to give up to 1 cc. of 6 to 10 per cent pollen extracts. Although these doses are much larger than are being used by other workers in the field of allergy, my extensive use of them indicates that they may be given with perfect safety and comfort, provided sufficient care and judgment are used in regulating the preliminary increases in dosage in the individual patient. Furthermore, the evidence at hand would seem to indicate that the administration of such massive doses leads to complete and permanent desensitization, with a disappearance of positive skin reactions.

The Perennial Treatment of Seasonal Hay-Fever

DR. AARON BROWN, New York: Treatment is either preseasonal or seasonal. Under the former, the usual method now employed, treatment is begun two or three months prior to the date of expected onset, injections being given at from five to seven day intervals to reach the maximum dosage in the class just before the hay-fever season begins. Under the latter, an effort is made to develop the patient's immunity rapidly by injections given daily or every other day. Injections are continued throughout the season. At present, treatment stops with the termination of the pollen season, to be resumed again the following year. Whatever tolerance has been built up in the patient is lost to a degree that has not heretofore been determined, making it necessary to start the treatment each year, as though the case were a new one. I have now for ten years been treating some of these pollen cases throughout the year, and greater experience fully bears out the conclusion heretofore reached; to wit, that this method offers a good means of obtaining better results than with the seasonal treatment, and better hopes for permanent results. The special advantages of the perennial treatment are that the treatment may be instituted at any period of the year, the dosage merely being increased to the maximum, and the interval then increased as tolerance permits. The actual number of visits to the office or the clinic can be lessened from the usual twenty or more to twelve. There is little likelihood of an interruption of the treatment by illness or absence for other causes. It distributes the load of the physician's work in clinic and in private practice throughout the year.

Urticaria: Consideration of Metabolic Factors

DRS. LEO H. CRIEP and LAWRENCE WECHSLER, Pittsburgh: The shock organ in human hypersensitiveness is the skin and the mucous membranes. Involvement of the former leads to certain clinical manifestations, such as urticaria and angioneurotic edema. In a certain percentage of cases of urticaria, allergy is shown either by skin sensitization tests or by clinical demonstration, such as the production of an attack by the ingestion of a food or the disappearance of urticaria on withdrawal of the offending substance. Skin tests, however, are not as satisfactory in this condition as they are in other allergic conditions, and the percentage of good results obtained from diet therapy varies greatly with various workers. In order to explain this inability to treat successfully at least some cases of urticaria, other factors have been reported as playing an important rôle in this connection. This paper includes a study of a group of urticaria cases with special reference to metabolism.

Partly because many cases of acute, transient urticaria clear up following the administration of a saline purge, and partly because others show the presence of achylia gastrica, the opinion is prevalent that the gastro-intestinal tract must be at fault if no other cause for this condition can be demonstrated. A complete study of a series of patients with urticaria was undertaken from the point of view of organic disease and functional derangement of the gastro-intestinal tract. This study included a clinical history and examination, and such laboratory investigations as roentgenologic studies of the gastro-intestinal tract and gallbladder, fractional examination of stomach contents, biliary drainage, icterus index, van den Bergh test, bromsulphthalein excretion, and feces. This investigation fails to reveal organic disease of the gastro-intestinal tract in any of the patients of the group and practically no functional derange-

ment. It is difficult to interpret the presence of achylia in some of these patients; it may play a part in disturbing the process of digestion, so that some of the proteins ingested are not completely split up. Sensitivity to incompletely split-up products of protein digestion has been mentioned in urticaria. But this condition may also be produced as a result of a histamine-like action of such incomplete products of protein metabolism on the vasomotor fibers of the skin. The occurrence of such products in the circulation is apparently not due to disease or impairment of liver function, if any significance may be attached to the present methods of investigating liver function.

The blood calcium is normal in urticaria. There is evidence, however, that there may be a disturbance in calcium metabolism. Furthermore, some patients show marked clinical improvement following administration of calcium and parathyroid.

Determinations of the basal metabolism do not point to a specific involvement of the thyroid gland.

Chemical study of the blood with reference to nitrogenous substances is entirely negative. There is no change in blood chlorides. The blood sugar is normal. Some of the patients have a tendency to show a hyperthyroid sugar tolerance curve.

As for the acid-base equilibrium, the carbon dioxide combining power of the blood plasma is within normal limits. The administration of alkali-ash diet or of large doses of acid is not followed by consistently good results.

Fever by Diathermy in the Treatment of Allergic Disease

DR. SAMUEL M. FEINBERG, S. L. OSBORNE, B.P.E., and DR. M. L. AFREMOW, Chicago: It has long been noted that fevers of infectious origin often improve temporarily the symptoms of asthma, hay-fever and perhaps other allergic disease. This has led us to search for a method for producing fever artificially for the possible benefit of allergic patients. The ordinary methods for fever production, such as intravenous protein injections and malaria inoculation, were discarded because they were considered too dangerous or not sufficiently controllable. We produced fever by diathermy with special electrodes, as used in the treatment of dementia paralytica. Several cases of asthma were treated, maximum temperatures of from 103 to 105 F. and sustained temperatures of over 101 F. being employed for a period of from four to eight hours. The majority of patients received two treatments at forty-eight hour intervals; others received more extended treatment. The type of patients treated were mainly those with chronic asthma who had been attending the clinic for years without relief. In the majority of instances there was improvement of the symptoms, in the milder cases amounting to complete relief. The period of relief lasted from a few days to two months or longer. Although some of the patients react rather strenuously to this treatment, no apparent harm results. In most instances, in from twelve to twenty-four hours they are free from all discomforts associated with the treatment. A careful study of the individual case will have to be made before such treatment may be considered either necessary, advisable or safe. We are conducting similar experiments in hay-fever.

Some Allergic Factors in Essential Epilepsy

DR. RALPH H. SPANGLER, Philadelphia: While such modern means as encephalography, ventriculography and stereoscopic roentgenograms have reduced the number of so-called idiopathic cases of epilepsy, no constant definite lesion of the brain or of any other organs has been found to account for the large group of patients with essential (nonorganic) epilepsy.

The trend today of many investigators into hereditary factors in both allergy and epilepsy is to consider their clinical manifestations the response of a neurogenous background resulting from a disturbed metabolism, which, it seems, it may be possible to transmit by the germ plasm. Frugoni has proved that the allergic state is transmissible in man. Pagniez and Turpin produced convulsions in animals by transfusing from epileptic patients, while no convulsions occurred when blood of healthy persons was used. Miller and Dandy have shown that in cats experimental lesions of the cerebrum which do not cause epilepsy can be rendered highly "epileptogenous" if metabolism is disturbed by the administration of a subminimal dose of a convulsant poison which has no toxic effect at all on a normal cat.

Brain lesions in animals and in human beings in a large percentage of cases do not produce convulsions. Collier says that epilepsy cannot be produced in an animal by brain injury unless the animal has been previously "epileptogenized" by a poison.

Cooke and Vander Veer concluded that "the constitutional peculiarity which makes probable the development of hypersensitiveness is transmitted according to mendelian laws as a dominant characteristic." They found the form of allergy often different in the parent and the offspring. Buchanan, investigating the familial distribution of the migraine-epilepsy syndrome in forty-six families, found a mendelian ratio of 3.09 to 1 for epilepsy, and in another series 3.08 to 1 for migraine. In a previous study of 100 consecutive adult cases of epilepsy, I found among the parents and grandparents 33 cases of asthma, 7 of hay-fever, 4 of hives, 6 of eczema, 66 of migraine and 11 of epilepsy. In these 100 epileptic patients, 54 gave a history of having had the following allergic symptoms: 18 were subject to hives, 11 to eczema, 3 to asthma, 3 to hay-fever and 19 to migraine. Multiple allergic manifestations have been reported in from one third to one half of their cases by most workers in allergy. If allergic manifestations are considered collectively as a clinical syndrome, they run quite true to type hereditarily.

The percentage of positive skin test reactions for hypersensitivity in patients with epilepsy, as reported by Ward and Patterson, Wallis and other workers has been found to compare quite uniformly with the percentage of positive reactions found in recognized allergic conditions.

The point of view regarding the possible reaction of epilepsy to allergy is gradually coming to include a study of factors concerned with the metabolic disturbance which permits the development of hypersensitivity.

Beckman's "potential alkalosis" hypothesis as a factor in allergy is offered as biochemical evidence that essential epilepsy is related to the allergic state. In support of this factor the value of the ketogenic diet in epilepsy and also in asthma and migraine is pointed out. From Trumper's report, however, that 1 Gm. of carbohydrate holds 3 Gm. of water in the tissues while 1 Gm. of fat holds only 0.1 Gm. of water in the body it may be possible, as McQuarrie has pointed out, that the value of the ketogenic diet is the result of the low level of carbohydrate metabolism of the diet, which tends to reduce the intracellular and extracellular water content of the body. This possibility is in line with Fay's hypothesis that the predisposing factor in epilepsy is a "supracortical edema precipitated by circulatory disturbance."

From physiologic studies, Olkan attributes epilepsy to a "vasomotor disturbance of the capillaries." Since, however, hydration states and vasomotor disturbances of the brain capillaries do not all excite convulsions, the influence of the sympathetic nervous system, as evidenced by smooth muscle contraction, which is common to all allergic states, must be considered as a factor. Angiospasm is a recognized characteristic phenomenon in allergy, and the investigations herewith cited tend to show that a biochemical alteration of metabolism is probably necessary to make the patient susceptible to sensitizing excitants from without or within the body.

The report that Joslin found no case definitely diagnosed as epilepsy among 5,000 cases of diabetes prompted me to review my series of 805 cases of epilepsy in private practice. I found no cases of urinary glycosuria among them. Swern a month ago reported that among 4,000 cases of clinical allergy there were only 6 cases of diabetes. Since diabetes produces an acidosis with dehydration, such surveys are significant in the light of Beckman's alkalosis hypothesis in allergy and the results of McQuarrie, Fay and others with the ketogenic diet and dehydration in epilepsy.

In treating cases of essential (nonorganic) epilepsy which presented allergic characteristics, my most satisfactory results were obtained with the use of a solution of crotalin given intramuscularly in doses varying from $\frac{1}{400}$ to $\frac{1}{50}$ grain at intervals of from seven to twenty-one days. A diet containing a preponderance of acid ash foods with a low carbohydrate content and a limiting of the fluid intake has been of adjuvant value in a number of cases.

Current Medical Literature

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Cancer, New York

15: 1235-1918 (July) 1931

*Neurogenic Sarcoma. F. W. Stewart and M. M. Copeland, New York. —p. 1235.
Rational Therapy for Cancer of Lower Lip. E. Fischel, St. Louis.—p. 1321.
*Avoidable Delay in Treatment of Carcinoma. S. P. Reimann and F. H. Safford, Philadelphia.—p. 1338.
*Autopsy Observations on One Hundred and Sixteen Cases of Malignant Disease, in Eighty-Nine of Which Experimental Injections of Suprarenal Cortex Extract (Coffey-Humber) Were Given. H. A. Ball, Los Angeles.—p. 1352.
Relation of Heredity to Occurrence of Spontaneous Leukemia, Pseudoleukemia, Lymphosarcoma and Allied Diseases in Mice. Maude Slye, Chicago.—p. 1361.
Intracranial Neoplasms in Lower Animals: Studies in Incidence and Inheritability of Spontaneous Tumors in Mice. Maude Slye, Harriet F. Holmes and H. G. Wells, Chicago.—p. 1387.
Effect of Roentgen Radiation on Reaction of Fluid of Rat Sarcoma 10. L. C. Maxwell and H. J. Ullmann, Santa Barbara, Calif.—p. 1401.
Studies in Cytology of Cancer. M. Levine, New York.—p. 1410.
Hereditary Basis of Melanosis in Hybrid Fishes. M. Gordon, Ithaca, N. Y.—p. 1495.
Morphology of Melanotic Overgrowths of Hybrids of Mexican Killifishes. H. D. Reed and M. Gordon, Ithaca, N. Y.—p. 1524.
Granulosa Cell Tumor of Ovary (Folliculoma Malignum). F. J. Taussig, St. Louis.—p. 1547.
Lentigo Maligna: Case Treated with Radium. H. C. Shaw, St. Louis. —p. 1557.
Case of Renal Adenocarcinoma with Unusual Manifestations. R. F. McNattin and A. L. Dean, Jr., New York.—p. 1570.
*Responsibility of Medical Profession for Cancer Education, with Especial Reference to Cancer of Cervix. J. C. Bloodgood.—p. 1577.

Neurogenic Sarcoma.—Stewart and Copeland state that a large percentage of sarcomas of the soft parts are of neurogenic origin and possess the same gross and microscopic features and exhibit the same clinical course as do similar tumors in patients with one or more manifestations of von Recklinghausen's disease. These tumors, on anatomic study, may or may not show definite nerve connection. Neurofibromas, plexiform or cirsoid neuromas, ganglionic neuromas, solitary neurogenic sarcomas, elephantiasis neuromatosa, nerve nevi and melanomas are a closely related clinical pathologic group. Other varied manifestations of von Recklinghausen's disease are discussed in detail. Extraperiosteal fibrosarcomas are frequently of neurogenic origin and associated with stigmas of neurofibromatosis. The fundamental cell of origin of the tumor is the Schwann cell. The lamellar sheath contributes to certain of the tumors. Neurogenic sarcomas have certain sites of predilection and a tendency to involve certain nerve groups. They may occur anywhere. The age incidence for the solitary tumors in the majority of cases is between 20 and 50 years. For the types occurring in von Recklinghausen's disease there are two peaks, one between 1 and 10 years, the other between 30 and 50 years. The tumor grade is of decided importance in estimating group prognosis and should be used in determining the type of treatment. A tumor of slow growth and long duration does not necessarily show a low grade structure. After excision, recurrence is the rule. These recurrences are not recurrences in the ordinary sense, but are new tumors arising from nerves in the vicinity. Definite evidence that irradiation after excision prevents or delays recurrence is lacking, although the five year radiation regressions of certain tumors suggest that this is at least probable. Certain tumors have recurred during the course of irradiation, and it may be that the irradiation should be withheld in the less cellular tumors until there is suggestive evidence of recurrence, to avoid using up the skin tolerance. The best irradiation results have been in the low grade tumors, which may gradually vanish through a process of slow sclerosis. There is little to support the irradiation treatment of the more malignant types. There is a relation between a long pretreatment interval of disease and a long posttreatment course. Certain tumors of long duration and either quiescent or of extremely slow growth have recurred after surgery, and the patient has been made worse by treatment. It may be that a policy of nonintervention in this type of growth should be instituted. In one instance gold seed implantation in a tumor, without previous external irradiation, was followed by distant soft part metastases not characteristic for that type of tumor. There exists a group of tumors in which the cell structure is epithelioid. These tumors may bridge the gap between typical neurosarcoma and typical melanoma. No patient with a grade II or III neurogenic sarcoma in the authors' series has lived for five years without disease and without any treatment during the five-year interval, except patients treated by amputation.

Delay in Treatment of Carcinoma.—Reimann and Safford investigated the histories of 3,780 carcinoma cases to discover whether patients are applying earlier for treatment. The difference in the delays from 1900 to 1927 is small. Women come no earlier than men but have shortened their delay more than men. The difference in delay between patients with carcinoma of the breast and uterus and others is insignificantly small. On the basis of their observations, the authors emphasize that more education is needed.

Necropsy in Malignant Disease.—Ball reports his gross and microscopic observations in the postmortem examination of 116 patients with malignant disease, 89 of whom were subjected to experimental injections of suprarenal cortex extract (Coffey-Humber). No essential change from that usually observed in the characteristics of malignant tissue in far advanced cases could be determined in the 89 patients that received the suprarenal cortex extract. The observations indicated that the incidence of metastases to the suprarenals is higher than the recorded experience of pathologists in general would seem to indicate. Immediate causes of death which were definitely secondary to the malignant process were tabulated for this entire series of 116 cases, with the conclusion that mechanical obstruction to a duct or viscus is by far the most frequent immediate contributory cause of death.

Responsibility for Cancer Education.—According to Bloodgood, cancer cannot be completely eradicated by periodic examinations or by annual pelvic examinations of women, by preventive measures, such as may be employed in the skin, mouth and cervix, by early diagnosis, or by immediate appropriate treatment—irradiation or operation. At the present time the chief hope of increasing the cures of cancer rests on increasing the power of the roentgen tube. The value of the education of the public and the profession, of earlier and more accurate diagnosis, of more skilled surgery and radiotherapy is well known. But the final eradication of cancer still depends on research—in the development of some form of intravenous therapy, or the discovery of the cause of cancer which may lead to a specific or curative treatment. The medical profession has never had a greater opportunity than today to aid in the control of a disease that ranks second among the causes of death in the civilized world.

American Journal of Hygiene, Baltimore

15: 1-234 (July) 1931

Resistance of Rats to Infection with Trypanosoma Lewisi as Affected by Splenectomy. W. H. Taliaferro, P. R. Cannon and Sara Goodloe, Chicago.—p. 1.
Studies on Effect of Environmental Factors on Animal Organism: II. Relation of Temperature to Injurious Effect of High Fat-Containing Diets. I. J. Kligler, A. Geiger and R. Mueller, Jerusalem.—p. 38.
Study of Rural School Ventilation in Cattaraugus County, N. Y. R. Cole, F. S. Lee, D. D. Kimball, G. T. Palmer, E. B. Phelps, E. L. Thorndike and C. E. A. Winslow, New York.—p. 49.
Relation Between Changes in Nationality Stock and Increasing Death Rates in Adult Life. C. E. A. Winslow and P. L. Wang, Hartford, Conn.—p. 79.
Mechanism of Natural Immunity to Diphtheria: Experiments in Porto Rico. E. Garrido-Morales and O. Costa Mandry, Porto Rico.—p. 89.
Further Work on Chara Spp. and Other Biologic Notes on Culicidae (Mosquitoes). R. Matheson and E. H. Hinman, Ithaca, N. Y.—p. 99.

Effects of Certain Toxic Substances on Ciliated Epithelium of Guinea-Pig. D. R. A. Wharton, Toronto.—p. 109.
Identification of Blood-Meal in West African Mosquitoes by Means of Precipitin Test: Preliminary Report. G. E. Davis and C. B. Philip, Lagos, Nigeria.—p. 130.
On Failure of Yellow Fever Virus to Persist in Colony of Aedes Aegypti. M. Frobisher, Jr., N. C. Davis and R. C. Shannon, Bahia, Brazil. —p. 142.
Improved Antigen for Complement Fixation Test in Yellow Fever. M. Frobisher, Jr., Bahia, Brazil.—p. 147.
Observations on Rate of Loss of Necator Americanus. G. C. Payne and Florence K. Payne, Porto Rico.—p. 149.
Environmental Studies of Families in Tennessee Infested with Ascaris, Trichuris and Hookworm. G. F. Otto, W. W. Cort and A. E. Keller. —p. 156.
Egg Production of Two Physiologic Strains of Dog Hookworm, Ancylostoma Caninum. O. R. McCoy, Baltimore.—p. 194.
Human Strongyloidiasis in Panama. E. C. Faust, New Orleans.—p. 203.
New Method for Examining Urine for Helminth Eggs. C. H. Barlow, New York.—p. 212.
Merthiolate as Preservative for Biologic Products. W. A. Jamieson and H. M. Powell, Indianapolis.—p. 218.
Absorption of Aluminum Compounds. D. Tourtellotte and O. S. Rask, Baltimore.—p. 225.
Natural Trypanosome of Canary. R. D. Manwell and C. M. Johnson, Baltimore.—p. 231.

American J. Medical Sciences, Philadelphia

182: 1-156 (July) 1931

*Heart in Old Age: Study of 700 Patients Seventy-Five Years of Age and Older. F. C. Willius, Rochester, Minn.—p. 1.
*Treatment of Gastrocardiac Syndrome (Gastric Cardiopathy). L. Roemheld, Gundelsheim, Germany.—p. 13.
Analysis of One Hundred Examples of Cardiac Pain in Private Practice. L. F. Bishop and L. F. Bishop, Jr., New York.—p. 19.
Rheumatic Fever in Adult Porto Rican Immigrants. E. P. Boas, New York.—p. 25.
Case for and Against the Operative Treatment of Angina Pectoris. W. M. Yater, Washington, D. C., and A. P. Trewhella, Jersey City. —p. 35.
New and Simple Mechanical Retractor for Abdominal Surgery. J. R. O'Sullivan and B. A. O'Connor, Kearny, N. J.—p. 43.
Specific Dynamic Action of Food in Abnormal States of Nutrition. J. M. Strang and H. B. McClugage, Pittsburgh.—p. 49.
Extra-Pollen Hypersensitivity: Important Consideration in Treatment of Hay-Fever. H. H. Gelfand, New York.—p. 81.
Appendicitis in Children. L. W. Tasche, Sheboygan, Wis.—p. 86.
Unique Anomaly of Biliary Tract: Communications Between Cystic and Hepatic Ducts with Occlusion of Common Duct and Separate Entrances into Duodenum. A. Gentile, Charlottesville, Va.—p. 95.
Intrahepatic Lithiasis. H. Kostler and I. E. Gerber, Brooklyn.—p. 99.
Observations on Clinical Application of Urine Sediment Count (Addis). W. Goldring, New York.—p. 105.
Disturbances in Handwriting and Clumsiness as Signs of Toxic Goiter. H. J. Vanden Berg, Grand Rapids, Mich.—p. 114.
Relation of Broca's Center to Lefthandedness. K. Rothschild, New Brunswick, N. J.—p. 116.

The Heart in Old Age.—Willius's study is based on 700 patients 75 years of age and older who were carefully investigated with especial reference to the cardiovascular system. The ages of the patients ranged from 75 to 96 years. Forty-seven per cent of the patients were aged 75 and 76 years. The numbers in the various age groups diminished progressively with advance in age; only 0.5 per cent were between the ages of 91 and 96 years. The ratio of the sexes was five men to one woman. The systolic blood pressure in 70.3 per cent of the patients was 140 mm. of mercury or more. Only 9.7 per cent had systolic blood pressures of 200 or more. The mean blood pressure ranged from 109 to 127.8. The diastolic blood pressure in 40.3 per cent of the cases was 90 or more. Diastolic pressures of 110 or more were present in 20.7 per cent. It is evident from this study that hypertension is the rule in aged patients. There were 315 patients (45 per cent) without clinical evidence of heart disease, as opposed to 385 patients (55 per cent) with clinical evidence of heart disease.

Gastrocardiac Syndrome.—Roemheld calls attention to a group of cardiac symptoms that are produced by disturbances of the digestive tract, more particularly by an excessive accumulation of air in the stomach. This complex of symptoms, for which the term "gastrocardiac syndrome" (gastric cardiopathy) is proposed, occurs most frequently in persons with a normal circulatory system. It is extremely annoying and often alarming and is apt to give rise to mistaken diagnoses of heart disease and inappropriate treatment. Organic cardiac lesions may, coincidentally, exist in patients with this gastrocardiac syndrome and complicate the latter condition considerably, but an exact differential diagnosis is not difficult.

American Journal of Ophthalmology, St. Louis

14: 577-718 (July) 1931

Uveitis Associated with Alopecia, Poliosis, Vitiligo and Deafness: Two Cases. W. R. Parker, Detroit.—p. 577.
Chemical Constituents of Aqueous, Vitreous and Lens: Comparative Study on Animal Eyes. C. S. O'Brien and P. W. Salit, Iowa City. —p. 582.
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Present Trend of Thought Regarding Vernal Conjunctivitis. M. W. Jacobs, St. Louis.—p. 640.
Social Service at Massachusetts Eye and Ear Infirmary. G. S. Derby, Boston.—p. 644.
Control of Tenotomized Muscle. M. Goldenburg, Chicago.—p. 648.
Case of Ocular Epilepsy. T. Hall Shastid, Duluth, Minn.—p. 652.
Hemangioma of Ciliary Body: Case. R. K. Daily, Houston, Texas.— p. 653.
Reflex Free Fundus Camera. R. von der Heydt, Chicago.—p. 655.
Bell's Phenomenon and Fallacy of Occlusion Test. S. V. Abraham, Chicago.—p. 656.
What Constitutes Satisfactory Cycloplegia? A. D. Prangen, Rochester, Minn.—p. 665.

American J. Orthopsychiatry, Menasha, Wis.

1: 345-450 (July) 1931

Training of the Psychiatrist: I. University Department of Psychiatry. F. C. McLean, Chicago.—p. 345.
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Id.: VI. Training in Social Sciences. K. L. M. Pray, Philadelphia. —p. 386.
Comparative Psychology and Mental Hygiene. F. L. Wells, Boston. —p. 400.
Early Recognition of Mental Diseases in Children. J. Kasanin and Louise Veo, Boston.—p. 406.
Ordinal Position of Problem Children. C. Rosenow and Anne H. Whyte, New York.—p. 430.

American Journal of Public Health, New York

21: 715-842 (July) 1931

Iodine in Nutrition. W. Weston, Columbia, S. C.—p. 715.
Local Public Health Work in Mexico. M. E. Bustamante, Mexico City. —p. 725.
Public Health Nurse in Rural Health Department: Progress in Cattaraugus County. Marian G. Randall, New York.—p. 737.
Diphtheria Prevention in Detroit. H. F. Vaughan and C. E. Buck, Detroit.—p. 751.
Newer Knowledge on Botulism and Mussel Poisoning. K. F. Meyer, San Francisco.—p. 762.
Diphtheria Prevention on State-Wide Basis and Part the Public Health Nurse Has Taken. Marion W. Sheahan, Albany.—p. 771.

Annals of Internal Medicine, Ann Arbor, Mich.

5: 1-94 (July) 1931

*Clinical Significance of So-Called Chronic Appendicitis. J. Friedenwald and T. H. Morrison, Baltimore.—p. 1.
Early Diagnosis of Neoplasms of Digestive Tract. T. R. Brown, Baltimore.—p. 9.
Studies on Mechanism of Pain of Peptic Ulcer. F. M. Smith and W. D. Paul, Iowa City.—p. 14.
Rheumatoid Arthritis. R. L. Cecil, New York.—p. 23.
*Diagnostic Triad in Syphilitic Aortitis. C. S. Danzer, Brooklyn.—p. 29.
*Agranulocytosis: Its Classification. S. R. Roberts and R. R. Kracke, Atlanta, Ga.—p. 40.
Evaluation of Skin Test in Allergy. H. L. Alexander, St. Louis.—p. 52.
Influence of Practitioner of Medicine in Guiding Public Toward Health. H. Emerson, New York.—p. 57.
General Practitioner and Public Health Program. F. J. Underwood, Jackson, Miss.—p. 65.

Significance of Chronic Appendicitis.—Friedenwald and Morrison, from a careful review of the literature as well as from their observations extending over a large series of cases, draw the following conclusions: I. Chronic appendicitis when

considered purely from a clinical standpoint is not as frequent as is usually held. That it does occur, however, is evidenced by the complete and permanent relief at times afforded by means of appendectomy. 2. The symptoms produced by so-called chronic appendicitis usually occur either as the result of widespread disturbance involving other abdominal organs not limited to the appendix itself or as forms of neuralgia occurring in the abdominal wall. The method of examination as advised by Carnett should always be followed in differentiating these conditions. 3. The roentgen signs are usually misleading and difficult of interpretation and can therefore be regarded as of only minor significance. 4. Individualization is of paramount importance. The diagnosis should never be made except following prolonged intensive study of the patient and should always be regarded with suspicion unless a history of preceding acute or recurring attacks can be elicited.

Diagnostic Triad in Syphilitic Aortitis.—According to Danzer, the diagnostic triad of syphilitic aortitis consists of angina pectoris, a negative carotid sinus (vagus) reflex, and a rapid blood sedimentation reaction. He discusses the variations and pitfalls of each of the symptoms.

Agranulocytosis.—Roberts and Kracke emphasize the importance of the leukopenias. The biologic and diagnostic importance of a leukopenia is probably as great as of leukocytosis. A classification of the granulopenias is submitted. Two conditions, acute and chronic granulopenia, are described. Agranulosis is classified in the general group of the agranulopenias. The relation of acute and chronic granulopenia to agranulosis is discussed. The problem of granulopenia was studied in 8,000 private clinic patients. One out of every four patients may be expected to have a mild granulopenia. One out of two female patients between the ages of 40 and 60 may be expected to show a mild granulopenia. The complaints of weakness, exhaustion or fatigue are twice as frequent in the granulopenic patients as in those with normal white cell counts. White cell counts done today show no difference from those done ten years ago. A clinical syndrome, consisting mainly of weakness, easy exhaustion, tendency to fatigue, loss of strength and inertia, associated with a diminished number of granulocytes, is described. The severity of the symptoms is largely dependent on the degree of diminution of the granulocytes, with complete collapse in the most severe type; namely, agranulosis.

Annals of Surgery, Philadelphia

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Adamantinoma of Lower Jaw. B. N. Carter, Cincinnati.—p. 1.
Primary Staphylococcus Infections of Nose, Lips and Face. I. I. Kodlin, New York.—p. 7.
Hemorrhage into and Infection of Large Tumors (Pachydermatoceles) of von Recklinghausen's Disease. G. J. Heuer, Cincinnati, and H. G. Bell, San Francisco.—p. 15.
Acute Empyema Thoracis: Statistical Study with Comparison of White and Colored Races. A. Ochsner and Idys Mims Gage, New Orleans.—p. 25.
*Treatment of Lung Abscess and Empyema by Packing. J. F. Connors, New York.—p. 38.
Function of Liver in Relation to Surgical Procedures. W. Walters, Rochester, Minn.—p. 55.
*Tumors of Extrahepatic Bile Ducts. P. F. Shapiro and R. A. Lifvendahl, Chicago.—p. 61.
Hematologic Studies as Basis for Determining Risk of Postoperative Hemorrhage in Jaundice Patients. R. Lewisohn, New York.—p. 80.
*Mesenteric Vascular Occlusion. J. L. Meyer, Chicago.—p. 88.
Orchiopexy for Undescended Testis. F. Torek, New York.—p. 97.
Diffuse Endothelioma of Bone: Ewing's Sarcoma. H. Koster and M. Weintrob, Brooklyn.—p. 111.

Packing Lung Abscess and Empyema.—Connors describes the technic of his method of treatment of lung abscess and empyema by packing. The patient is placed on the unaffected side with the chest resting on a small pillow. The arm of the affected side is drawn up over the head. If the empyema is localized, the incision is made at the dependent portion of the focus. If, however, the empyema is diffuse, as is usually the case, a 4 inch incision is made in the direction of the ribs along the eighth interspace in the subscapular region. About 2½ inches of the eighth and ninth ribs is resected subperiosteally. The intercostal muscles and vessels are removed en masse from the chest wall after being ligated for a distance corresponding to the length of the ribs resected. An aspiring needle is inserted into the pleural cavity. If pus is obtained, a grooved director is plunged in alongside the needle. The opening is gradually enlarged until it admits the tip of the aspirating apparatus. As much pus as possible is aspirated and the pleura is opened widely. At this juncture the patient occasionally coughs violently and experiences dyspnea, but this may be controlled by closing manually the opening into the pleural cavity. The large masses of fibrin usually present are removed under vision with sponge forceps. If adhesions which form communicating intrapleural cavities exist, they are broken down in order to form one cavity. Originally, the infected and uncontaminated portions of the pleura were converted into one cavity by manually removing the adhesions which separated them. At present, however, this method has been abandoned and uncontaminated pleura is not entered. Indeed, if, as in one case, the firm adhesions separate two pockets of pus, they are not disturbed but two separate thoracotomies are performed. For packing the pleural cavity, iodoform gauze that has been washed and wrung out is used. With long dressing forceps it is introduced first to the apex of the cavity. It is packed tightly in this direction and also to the sulcus formed by the thoracic wall and the lung. More and more packing is introduced with the forceps and is made firmer by digital pressure. This procedure is continued until the cavity is completely filled. The skin wound is laid open wide by packing, and a dry dressing is placed over it. This dressing is held in place by adhesive strappings that do not extend beyond the median line. In the thirty-five cases in which the author has used this method the packing was removed in from one to six days, although most commonly in from one to four days. Without exception the pleural surfaces, visceral and parietal, presented a smooth, clean, healthy appearance. The lung surface was pinkish and elastic. A few vigorous coughs expanded the lung to within an inch of the parietal pleura. Through the large thoracotomy wound, the interesting mechanism of closure of the pleural cavity could be easily observed. Contrary to the common conception, the lung on the side of the open pleural cavity expands with expiration. Coughing is the most forcible form of expiration and causes the lung to expand and fill the pleural cavity more than any other form of pulmonary exercise. The comparative inefficiency of blow bottles may be easily observed through the thoracotomy wound. Blow bottles are used continually, however, but, in addition, advantage has been taken of the observation of the value of coughing. Patients are instructed to cough every hour until tired. After the first dressing, the pleural cavity is packed loosely or not at all. In the beginning, many tight packings followed the first dressing. Although patients were cured in most of these cases and although the lung expanded in the presence of the frequent tight packings, it was felt that the cases in which the lung was held collapsed and firmly fixed by fibrinous membrane were due to this procedure. Four cases in which the original packing was left in for six days required secondary operations for decortication. The initial tight packing breaks down the entire pleural membrane containing bacteria, pus and fibrinous exudate. The pleura becomes clean, pink and shiny after even twenty-four hours of tight packing. Thereafter, there is no further treatment of the cavity necessary—no tubes, no irrigations, no elaborate fixtures for the maintenance of drainage or irrigation. The cavity is clean and there is no more exudate than would be expected in the large clean granulating surface that now lines the pleural cavity. When one considers the pain to the patient, the trials for the surgical dresser and the constant flow of pus over a long period of time with the old method, the advantages of the packing method are obvious. Dressings may be changed superficially every day, and they are not painful except in the manipulation of the skin wound, and this may be avoided by the application of petrolatum gauze to this part or by the insertion of broad retractors.

Tumors of Extrahepatic Bile Ducts.—Shapiro and Lifvendahl present a clinical and pathologic study of fifteen cases of tumor of the extrahepatic bile ducts. These included one amputation neuroma of the cystic duct, one solid adenoma, one congenital cyst and twelve carcinomas. According to this material, carcinoma of the extrahepatic bile ducts is twice as common as carcinoma of the gallbladder and three times as frequent as carcinoma of the head of the pancreas. It should be given, therefore, greater consideration in the differential

diagnosis of lesions of the porta hepatis. In the cases observed, the clinical course, especially that part of it which was severe enough to demand medical attention, was brief. The clinical syndrome was usually atypical. Jaundice was usually not the first symptom, it was usually not painless, and it was not always steadily progressive. It was not always the most prominent symptom and often appeared quite late. The clinical picture was often masked by symptoms arising from accidental complications, particularly duodenal ulcerations, or from the metastases. There was no difference between the scirrhous and the polypoid tumors in their tendency to intramural spread, in their histologic structure, or in their tendency to metastasize. The tendency of these tumors to colloid degeneration with numerous goblet cells is an expression of the original intestinal character of the bile duct epithelium. The frequency of duodenal complications is noteworthy. The premise that these tumors announce their presence and even kill before they metastasize is not supported by this material. Metastases were common, extensive and widespread, and in some cases dominated the clinical and pathologic picture. Small as they are, these tumors, contrary to current conception, send out metastases long before they announce their own presence. This may account for the present, ungratifying permanent results of radical resection.

Mesenteric Vascular Occlusion.—Meyer's article is based on a review of ninety-two proved cases of mesenteric vascular occlusion which have been reported during the past ten years. There were thirty-nine recoveries and fifty-three deaths, or a gross mortality of 57.6 per cent. In nine instances, spontaneous recoveries occurred. In three of these cases the occlusion apparently did not cause abdominal symptoms and the condition was found only at necropsy. In six instances the symptoms were sufficient to warrant laparotomy but no resection was done. There was one instance of sloughing of the diseased segment through the drainage wound. There were forty-three cases in which operative resection was done. The mortality in this group was 32.6 per cent. Recoveries include three cases of practically complete removal of the small intestine. No definite symptom complex can be formulated, but the onset of acute abdominal pain not relieved by enema, accompanied by high leukocyte count, disturbed bowel function with or without collapse, tenderness and rigidity in the presence of a disease of the circulatory system should lead one to suspect mesenteric vascular occlusion. One cannot tell from the color of the bowel whether or not it will recover function. Enterostomy apparently is not of value in this condition. Resection of the diseased area offers the patient the best chance for recovery. In this series the highest percentage of recoveries occurred in the group in which resection and immediate anastomosis were done.

Archives of Otolaryngology, Chicago

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Present Status of Plaut-Vincent's Infection. V. Hartell, Detroit.—p. 1.
*Ultraviolet Light in Tuberculosis of Larynx. B. Katz, Los Angeles. —p. 9.
Carcinoma of Sphenoid Sinuses with Invasion of Cranial Cavity. C. Davison and S. Kahr, New York.—p. 16.
Osteoma of Nasal Septum with Large Epidural Abscess; Operation; Recovery. H. M. Goodyear, Cincinnati.—p. 23.
Radical Operation on Frontal Sinus Under Local Anesthesia. M. S. Ezner, Philadelphia, and J. J. Pressman, Los Angeles.—p. 26.
Paranasal Sinusitis: Local Immunization Treatment. K. W. Amano, Philadelphia.—p. 30.
*Problems of Deafness. G. E. Shambaugh, Chicago.—p. 36.
Interpretation of Conduction Deafness: Two Unusual Cases. A. G. Pohlman, St. Louis.—p. 48.
Physical Therapy in Treatment of Diseases of Ear, Nose and Throat. T. H. Odeneal, Beverly, Mass.—p. 64.
*Calcigerous Metaplasia of Auricular Cartilage. D. R. Higbee, San Diego, Calif.—p. 70.

Ultraviolet Rays in Tuberculosis of Larynx.—Katz emphasizes the fact that laryngeal tuberculosis is part of a general tuberculosis. Therefore, improvement of the larynx depends most of all on the general condition of the patient. That general irradiation with ultraviolet rays is beneficial in tuberculosis has been proved by many authors. The improvement depends on the change in calcium metabolism. While some think that this general action of the rays is the most important, experimental and clinical observations mentioned by the author prove that the local action is also of significance. As far as the larynx is concerned, treatments with ultraviolet rays are of value as an auxiliary measure. Although some physicians depend only on ultraviolet rays in treating patients for tuberculosis of the larynx, the author is not enthusiastic about resorting to this method alone. If ulceration of the larynx is present, treatments with trichloracetic acid are indicated. In cases of edema or infiltration, electrocauterization is the method of choice. Because the pain and inflammatory reaction after electrocauterization depend to a certain extent on secondary infection of the wound, the cauterized area should be covered with trichloracetic acid immediately after electrocauterization. This acid forms a white slough on the wound which prevents secondary infection with ordinary and tuberculous germs. The application of the acid likewise decreases pain from the reaction and increases the subsequent shrinkage of the infiltration or edema.

Deafness.—Shambaugh asserts that the problems of readjustment that confront the otosclerotic person are particularly difficult. When a child is the victim of acquired or congenital deafness, the adjustments, such as are possible, are accomplished without mental distress to the child; in a large measure, the same may be said concerning the loss of hearing associated with the declining faculties in old age. But when a person in middle life is confronted with progressive loss of hearing, the problems of adjustment are often distressing. A person entering the land of silence finds himself even more isolated, often, than does the victim of blindness. Efforts at rehabilitation must take this into consideration and undertake to create a new environment to replace the one that is slipping away. A complete economic readjustment is often necessary. There are occupations in which deafness is not necessarily a handicap, but how to find out just what these occupations are is a perplexing problem. One problem of first importance for the victim of progressive deafness is bridging the ever increasing chasm caused by the decline in hearing. The most substantial crutch for these people to lean on is to cultivate the faculty of paying closer attention to the speaker, thereby developing the ability to piece out what is not clearly heard by interpreting facial expression, that is, learning so-called lip reading. Those with normal hearing scarcely appreciate to what extent even they rely on the assistance from reading lips to interpret what cannot be readily heard. The cultivation of the ability to read lips becomes of increasing importance as the function of hearing declines, and although the facility with which one acquires the ability to read lips differs with the individual, it is the most important substitute available for those who find that they are losing their ability to hear. Mechanical devices as aids to hearing take second place. Any device that is conspicuous is particularly objectionable. Ear trumpets, speaking tubes and electrical devices are not equally useful in all cases of defective hearing. A person with nerve deafness is restricted to the use of ear trumpets, or, when the deafness is more marked, to the speaking tube. Electrical devices, because of the lowered bone conduction in nerve deafness, are of no particular aid, as a rule, in this type of deafness. On the other hand, the otosclerotic person with fixation of the stapes and deafness due to obstruction in sound conduction finds considerable assistance from the use of the electrical hearing device, just as the ability to hear well over the telephone depends on the increased bone conduction always present in obstructive deafness. The most serious complaint from those who use such devices is that they magnify all sounds, so that an instrument which increases the loudness of the spoken voice to bring it up to the threshold of hearing at the same time magnifies other sounds throughout the tone range to such an extent as to produce a great deal of confusion and annoyance. Persons who in addition to the deafness caused by fixation of the stapes producing a defect in hearing for the lower tones have developed an extensive defect for the upper tones as the result of secondary degeneration of the nerve experience less confusion from this overmagnification than do those with deafness resulting from fixation of the stapes alone and restricted, therefore, to the lower tones. From this cursory survey of the problem of rehabilitation for those who in adult life lose their hearing, it is apparent that the problem is social rather than medical. What is needed is organized assistance to help in maintaining, or rather in reestablishing, social con-

tacts, to give encouragement in acquiring facility in lip reading, and to aid in securing suitable employment. Considerable progress has been made in this country in solving this problem. The League for the Hard of Hearing maintains social centers where those with defective hearing may meet and cultivate lip reading and participate in entertainment suitable for their condition. The league maintains employment bureaus to assist deafened persons in maintaining their economic independence. The problems of deafness include the prevention of congenital and acquired serious deafness in young children, arresting of the tubotympanic diseases common in childhood, the discovery of the cause and eventually the prevention of otosclerosis, and arresting the degenerative processes that involve the nerve of hearing in advancing years. These are the medical problems that are engaging the serious attention of otologists. The author believes that otologists should endeavor to establish a periodic examination of the ears of school children in order to assist in the educational problems of those who are handicapped because of defects in hearing, and to be able to call attention to the aural conditions prevalent among school children which require medical attention. Finally, they need to assist in the great social problem of rehabilitation for those who are deafened in middle life. These are some of the problems of deafness. No greater opportunity exists for human salvage among the population than that presented by those who are deafened, and there is no field that has been more neglected.

Calcigerous Metaplasia.—Higbee reviews all the cases of calcigerous metaplasia of the auricular cartilage reported and to these adds a case that he observed. The coincidence of senility and frost-bite in earlier life is so frequent as to suggest a direct relationship. The author uses the decriptive term calcigerous metaplasia of the auricular cartilage because it describes the changes occurring whether the deposit laid down assumes the typical formation of bony tissue or merely an infiltration of calcium.

California and Western Medicine, San Francisco

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Diseases of Biliary Tract: Clinical and Surgical Aspects; Case. C. F. Dixon, Rochester, Minn.—p. 1.
Respiratory Failure in Poliomyelitis: Its Treatment with Drinker Respirator: Cases. E. B. Shaw, H. E. Shelander and M. A. Limper, San Francisco.—p. 5.
Infiltration Anesthesia in Obstetric Surgery. S. N. Pierce, Los Angeles. —p. 7.
Foreign Bodies in Air Passages: Their Diagnosis and Removal. W. B. Faulkner, Jr., and E. C. Faulkner, San Francisco.—p. 12.
Flagellate Trichomonas Hominis in Rabbit: Its Pathogenicity; Instance of Infestation in Man, with Necropsy Findings. F. R. Nuzum, A. H. Elliot and Blanche V. Priest, Santa Barbara.—p. 19.
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Sensitization in Sinus Disease. S. H. Hurwitz, San Francisco.—p. 26.
Tuberculosis of Tracheobronchial Glands. J. C. Savage, Los Angeles. —p. 32.
Outstanding Problem for Pediatricians. D. K. Woods, San Diego.—p. 35.
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Colorado Medicine, Denver

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Cerebral Hemorrhage: Its Early Phenomena and Treatment. P. Work, Denver.—p. 315.

Florida Medical Association Journal, Jacksonville

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Manual Rotation of Entire Fetus in Occipitoposterior Positions as Substitute for Forceps Rotation. M. C. Wilson, Miami.—p. 20.
Sacro-Iliac Strain from Standpoint of Railroad Surgeon. C. C. Webb, Pensacola.—p. 23.
Inadequacy of Hospitalization Facilities. L. S. Laffitte, Gulf Hammock.—p. 24.
Edema, a Physicochemical Imbalance. E. M. Hendricks, Fort Lauderdale.—p. 28.
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Georgia Medical Association Journal, Atlanta

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Scientific Medicine and Menace of Medical Underworld. C. M. Rosser, Dallas, Texas.—p. 253.
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Iowa State Medical Society Journal, Des Moines

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Goiter. C. B. Luginbuhl, Des Moines.—p. 329.
Hazards in Surgery of Toxic Goiter. T. E. Davidson, Mason City. —p. 332.
Chronic Renal Tuberculosis. H. L. Kretschmer, Chicago.—p. 336.
Medical Economics. E. L. Wurtzer, Clear Lake.—p. 341.
Newer Methods in Cataract Surgery. W. Stevenson, Quincy, Ill. —p. 343.
Poliomyelitis in Iowa in 1930. H. A. Lanpher, Des Moines.—p. 346.

Journal of Bacteriology, Baltimore

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Ultrafiltration Studies on Virus of Poliomyelitis. C. E. Clifton, F. W. Schultz and L. P. Gebhardt, San Francisco.—p. 7.
Bacteriology of Pulp Slime. T. D. Beckwith, Berkeley, Calif.—p. 15.
Production of Yeast-Growth Stimulants by Molds: I. Aspergillus Niger, Trichoderma Lignorum and Aspergillus Clavatus. H. Schopmeyer and E. I. Fulmer, Iowa State College.—p. 23.
Modification of Kolle Flask. J. W. Churchman, New York.—p. 29.
Determination of Carbohydrates in Bacteriologic Culture Media. C. F. Schmidt, Jr., Rochester, N. Y.—p. 31.
Specific Potency of Certain Cations with Reference to Their Effect on Bacterial Viability. C. E. A. Winslow and Eloise T. Haywood, New Haven, Conn.—p. 49.
Statistical Inquiry into Methods for Estimating Numbers of Rhizobia. P. W. Wilson and Ethel D. Kullmann, Madison, Wis.—p. 71.

Journal of Bone and Joint Surgery, Boston

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*Treatment of Chronic Osteomyelitis with the Maggot (Larva of Blow Fly). W. S. Baer, Baltimore.—p. 438.
Maggots in Treatment of Wound and Bone Infections. H. I. Goldstein, Camden, N. J.—p. 476.
American and German Orthopedic Surgery. F. Lange, Munich, Germany.—p. 479.
*Breaking Strength of Healing Fractures. M. K. Lindsay and E. L. Howes, New Haven, Conn.—p. 491.
Stabilization of Foot: Study of Late Results. L. J. Miltner, Peiping, China.—p. 502.
Double-Leaf Shelf Operation for Congenital Dislocation of Hip. C. L. Lowman, Los Angeles.—p. 511.
Transplantation of Biceps Femoris for Relief of Quadriceps Femoris Paralysis in Residual Poliomyelitis. C. H. Crego, Jr., St. Louis, and F. J. Fisher, Detroit.—p. 515.
Proximal Osteosynthesis in Intracapsular Fracture of Hip. M. O. Henry, Minneapolis.—p. 530.
Our Treatment of Osteomyelitis and Allied Suppurative Processes: One Hundred and Fifty-Five Cases. J. Kulowski, Iowa City.—p. 538.
Recurrent Fracture of Patella: Atypical Case. M. J. Wilson, New York.—p. 563.
Bilateral Fracture of Clavicle: Atypical Case. M. J. Wilson, New York.—p. 564.
Luetic Synovitis of Knee. J. S. Neviaser, Washington, D. C.—p. 566.
Groove for Hypogastric Vessels. A. B. Ferguson, New York.—p. 568.
Chronic Cortical Abscess of Ulna Caused by Bacillus Typhosus. E. Horgan, Washington, D. C.—p. 570.

Subastragalar Dislocation of Foot. R. F. Atsatt, Santa Barbara, Calif. —p. 574.
Generalized Polydactylism with Concurrent Syndactylism. R. B. Acker, South Bend, Ind.—p. 580.
*Arthroscope: New Method of Examining Joints. H. Finkelstein and L. Mayer, New York.—p. 583.
Skeletal Immobilization in Difficult Fractures of Shafts of Long Bones: New Method of Treatment as Applied to Compound Comminuted and Oblique Fractures of Both Bones of Leg. H. C. Pitkin and H. M. Blackfield, San Francisco.—p. 589.
Simple Wire Pin Skeletal Traction Apparatus. S. S. Mathews, Los Angeles.—p. 595.
Rotary Bone File. J. I. Mitchell, Memphis, Tenn.—p. 598.
Spinal Anesthesia Carriage. E. C. Beck, New York.—p. 600.
Simple Modification of Putti's Splint for Early Treatment of Congenital Dislocation of Hip. G. K. Coonse, Columbia, Mo.—p. 602.
Support for Paralyzed Hands in Crutch Walking. N. S. Ransohoff, New York.—p. 606.
Thigh-Knee Support for Countertraction. H. E. Conwell, Fairfield, Ala. —p. 609.
Self-Retaining Retractor Useful in Open Operations on Bone. P. M. Girard, Dallas, Texas.—p. 612.
Adjustable Torticollis Brace for Postoperative Use. M. M. Clark, Elyria, Ohio.—p. 613.
Extracapsular Fractures of Femur in Aged: Contribution to Merits of Russell Treatment. A. Wendel, Chicago.—p. 616.

Treatment of Chronic Osteomyelitis with Maggots.—According to Baer, maggots have been found to be a tremendously useful adjunct to thorough surgical treatment of chronic osteomyelitis and are far more successful in producing permanent healing of these extensive wounds than any other method. Maggots, by their digestive action, clear away the minute fragments of bone and tissue sloughs caused by operative trauma in a way not accomplished by any other means. This is a tremendously valuable asset in the healing of a wound. Maggots cause wounds to become alkaline and in this way diminish growth of pathogenic bacteria. Maggots seem to have other more subtle biochemical effects within the wound itself and perhaps cause also a constitutional reaction inimical to bacterial growth. As raised and sterilized in the manner described by the author, they may be used in any wound without risk to the patient. The posttraumatic or postoperative general condition of the patient is better in maggot treatment than in the older forms of treatment in which infection was combated by chemicals or other types of dressing. There is less absorption and less toxic reaction. In open tuberculous abscesses, with or without secondary infection, wide exposure followed by maggot treatment has proved surprisingly effective in a small number of cases and will be given further trial.

Breaking Strength of Healing Fractures.—Lindsay and Howes describe a quantitative method and develop a basic curve indicating the breaking strength of regenerating bone. They found that strength first manifests itself by the sixth day and then increases rapidly to the twenty-first day. It was observed that the callus grew steadily larger during this time. There is a period of decline in strength after the twenty-first day, during and following which time the callus decreases in size. There is a secondary rise in strength from the thirty-third to the forty-fifth day. A strength is attained on the twenty-first day which is comparable to that on the thirty-ninth, but a period of weakness exists between the two. There is a direct correlation between the results of this study and previously observed histologic facts and clinical data.

Arthroscope.—Finkelstein and Mayer call attention to the fact that during the past decade there has been an increasing interest in the exact diagnosis of joint diseases and a consequent development of methods for accurate determination of the pathologic lesion. The study of synovial fluids—chemical, bacteriologic and microscopic—oxygen injection of joints with subsequent roentgen examination, complement fixation tests and ultimately biopsy of the joint have added immensely to the diagnostic armamentarium. These efforts have not been without their reverse aspects. The authors have seen a flare-up of a joint following a biopsy, and in several instances in which the biopsy revealed only chronic inflammation a subsequent synovectomy revealed the presence of tuberculosis. In at least four cases during the past year joint fluids gave negative guinea-pig reactions, although the joints later were proved tuberculous by microscopic examination. In many other instances, despite the use of all known methods, the diagnosis could not be made until an extensive exploratory operation was performed. In a study of some hundred cases of tuberculosis treated at the country home of the Hospital for Joint Diseases, the authors have been impressed by their inability to prove tuberculosis bacteriologically or microscopically in more than half the number. In a search for improvement in methods of diagnosis, a punch was devised by means of which a small bit of tissue might be removed from within the joint with a minimal degree of trauma. This instrument, however, had the obvious disadvantage of being used in the dark. It was therefore but a short step to conceive of an electrically lighted instrument which would permit the surgeon to view the interior of the joint and to remove tissue for examination under control of the eye. This instrument would have essentially the same construction as a cystoscope. After several months of experimentation, two instruments were devised, one solely for visualization of the joint, the other for visualization combined with a device for removal of tissue. Though the value of the method is at the present time problematic the authors' experiences have encouraged them in the belief that this instrument will enable more accurate diagnosis of joint lesions than any method previously devised.

Journal of General Physiology, Baltimore

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Iso-Electric Point of Standard Gelatin Preparation. D. I. Hitchcock, New Haven, Conn.—p. 685.
Phototropic Sensitivity of Phycomyces as Related to Wavelength. E. S. Castle, Cambridge, Mass.—p. 701.
Crystalline Pepsin: III. Preparation of Active Crystalline Pepsin from Inactive Denatured Pepsin. J. H. Northrop, Princeton, N. J.—p. 713.
Protein Coagulation and Its Reversal: Serum Albumin. M. L. Anson and A. E. Mirsky, New York.—p. 725.
Deformability and Wetting Properties of Leukocytes and Erythrocytes. S. Mudd and Emily B. H. Mudd, Philadelphia.—p. 733.
Salt Effects on Eggs and Nauplii of Artemia Salina L. Eleanor Boone and L. G. M. Baas-Becking, Pacific Grove, Calif.—p. 753.
Salt Effects on Swarmers of Dunaliella Viridis Teod. L. G. M. Baas-Becking, Pacific Grove, Calif.—p. 765.

Journal of Nervous & Mental Disease, New York

74: 1-136 (July) 1931

Sciatica: Clinical Forms and Treatment of Rheumatismal Sciatica. H. Roger, Marseilles, France.—p. 1.
Problem of Mental Disease and Delinquency in Adolescent. M. Osnato, New York.—p. 11.
Portable Reaction of Degeneration Apparatus. J. van de Erve and J. M. van de Erve, Charleston, S. C.—p. 34.
Case of Pneumococcus (Type III) Meningitis Treated with Potassium Permanganate: Recovery; Plea for Its Trial. M. H. Weinberg, Pittsburgh.—p. 38.
Fanning as Structural Pattern in Nervous System. J. J. Michaels, Detroit.—p. 46.

Journal of Nutrition, Springfield, Ill.

4: 163-304 (July) 1931

Coefficients of Digestibility of Constituents of Milk and Balance of Calcium and Phosphorus in Calves on Milk Diet. J. S. Hughes and H. W. Cave, Manhattan, Kan.—p. 163.
*Effect of Mineral Oil Administration on Nutritional Economy of Fat Soluble Vitamins: I. Studies with Vitamin A of Butter Fat. R. W. Jackson, New Haven, Conn.—p. 171.
Vitamin A Deficiency in Albino Mouse. J. M. Wolfe and H. P. Salter, Jr., Nashville, Tenn.—p. 185.
*Vitamin Value of Cod Liver Meal. A. D. Holmes, Madeleine G. Pigott and D. F. Menard, Boston.—p. 193.
Tentative Method of Assaying Foods for Vitamin G. Hazel E. Munsell, Washington, D. C.—p. 203.
Effect of Pasteurization on Vitamin C Content of Milk in Presence of Certain Metals. E. W. Schwartze, F. J. Murphy and G. J. Cox, Pittsburgh.—p. 211.
*Further Observation of Effect of Light on Synthesis of Vitamins. V. G. Heller and Ruth Reder St. Julian, Stillwater, Okla.—p. 227.
Mineral Exchanges of Man: I. Organization of Metabolism Ward and Analytic Methods. S. H. Bassett, C. A. Elden and W. S. McCann, Rochester, N. Y.—p. 235.
Relative Values of Proteins of Linseed Meal and Cottonseed Meal in Nutrition of Growing Rats. W. W. Braman, Urbana.—p. 249.
*Age Factor in Response of Rat to Level of Dietary Protein. A. H. Smith and T. S. Moise, New Haven, Conn.—p. 261.
*Fat Soluble Vitamins: XXXII. Distribution of Vitamin A in Tomato and Stability of Added Vitamin D. H. Steenbock and Inez M. Schrader, Madison, Wis.—p. 267.

Liquid Petrolatum and Vitamin A.—Jackson demonstrated in experiments on rats that liquid petrolatum causes a considerable loss of vitamin A to the animal organism if the liquid petrolatum is mixed with the vitamin A (in the form of butter fat) prior to ingestion. The administration of the liquid

petrolatum separately from the butter fat results in only a slight diversion of vitamin A. Moderate increase of the butter fat intake appears to protect the animal from any vitamin A deficiency when the liquid petrolatum is given separately.

Vitamin Value of Cod Liver Meal.—Holmes and his associates obtained samples of cod liver meals on the open market. These were added to a typical poultry ration. Pens of twenty Rhode Island Red chicks were used for the test. Chicks in control pens received cod liver oil incorporated in the basal ration. The experimental period was of eight weeks' duration and test birds were removed from each pen at the end of the third, fifth and eighth weeks. These were killed and the tibias removed and examined to determine the extent of calcification. It was found that the best cod liver meals produced about the same results when 2 per cent was added to the basal ration as when 0.5 per cent of cod liver oil was added. The poorer meals were found to possess little if any vitamin value.

Light and Synthesis of Vitamins.—Heller and St. Julian describe experiments from which they conclude that, after green leaves have become a potent source of vitamin through exposure to the sunshine, the potency is not destroyed with the destruction of the color in blanching. As the vitamin forms, it seems to be stored in the portion of the plant most exposed to the sunlight and it is not transferred to the other portions of the plant, and the most actively growing portion, if etiolated, may be devoid of potency. It is evident that a number of interrelated factors are active in the synthesis in light. Neither wavelength nor heat can be considered solely responsible. Wheat seedlings germinated in open sunlight possess some antirachitic properties; grown under green glass there is slight potency, while no beneficial results were obtained from seedlings grown under red glass or in darkness. Tests of green and yellow beans, carrots and beets failed to show any relationship between potency and color. Vegetables are a poor source of vitamin D.

Age and Response to Protein.—Smith and Moise state that on the basis of data collected by them it appears that, under the conditions imposed by unilateral nephrectomy, maintenance, growth and general well being are promoted in rats of widely different ages when the ration contains 38 per cent of the calories as protein, as well as or better than when only 12 per cent is derived from this foodstuff. Furthermore, good, though not maximal, rates of growth are supported in young rats 30 days of age at the beginning of the feeding period on a ration 67 per cent of the total calories of which arises from its protein content. This ration, however, is not favorable for maintenance or growth of rats 6 and 12 months of age over periods of 56 or 150 days.

Fat Soluble Vitamins.—Steenbock and Schrader review the literature on the vitamin content of tomatoes. Experiments performed by them to determine the distribution of vitamin A in red tomatoes showed that, freed from skin and seeds, the pulp contains approximately thirty-two times as much vitamin A as the clear yellow serum. From the nutritive standpoint, therefore, there is no justification for marketing a filtered tomato juice in preference to a juice containing the pulp in suspension. Vitamin D added in the form of viosterol was found to have maintained its activity after sterilization, followed by thirteen months' storage at 37 C.

Kentucky Medical Journal, Bowling Green

29: 331-388 (July) 1931

Pernicious Anemia. J. Harvey, Lexington.—p. 334.
Fetal Liver Feeding in Aplastic Anemia. H. V. Neland, Louisville. —p. 340.
Diet in Chronic Nephritis. V. E. Simpson, Louisville.—p. 342.
Pitfalls in Use of Iodine in Diseases of Thyroid Gland. W. Hume, Louisville.—p. 355.
Pitfalls in Therapy in Use of Arsphenamines. Jethra Hancock, Louisville.—p. 359.
Pitfalls in Use of Digitalis. W. A. Jenkins, Louisville.—p. 364.
Pitfalls in Therapy in Use of Circulatory Stimulants. E. P. Bradley, Lexington.—p. 367.
Foreign Body, Obstruction of Intestine with Peritonitis: Case. G. G. Altman, Louisville.—p. 370.
Case of Severe Ulcerative Colitis Treated with Bacteriophage. W. E. Applehans, S. P. Myer and J. Love, Louisville.—p. 372.
Multiple Injuries Sustained in Motor Car Accident. G. P. Grigsby, Louisville.—p. 376.
Miscarriages. W. T. McConnell, Louisville.—p. 378.

Michigan State M. Soc. Journal, Grand Rapids

30: 487-576 (July) 1931

Roentgen-Ray Diagnosis of Peptic Ulcer. A. W. Crane, Kalamazoo. —p. 487.
Medical Treatment of Peptic Ulcer. R. C. Brown, Chicago.—p. 491.
Postoperative Jejunal Ulcer. N. M. Allen, Detroit.—p. 496.
Pain in Relation to Neurologic Diagnosis. C. T. Prout, Detroit.—p. 498.
Modern Trends in Anesthesia. F. J. Murphy, Detroit.—p. 503.
Use of Iodized Oil by Sanatorium Physician in Diagnosis of Bronchial Affections. S. Pritchard, Battle Creek.—p. 506.
Two Unusual Cases of Nerve Injury: I. Bullet in Median Nerve. II. Section of Femoral at Operation. E. S. Gurdjian, Detroit.—p. 508.
Responsibility of County Medical Societies in Legislative Activity. A. H. Whittaker, Detroit.—p. 512.
Analysis of Twenty-Five Cases of Eclamptic Pregnancies. B. L. Lieberman, Detroit.—p. 517.
Psychiatry in Pediatrics. L. H. Bartemeier, Detroit.—p. 521.

Minnesota Medicine, St. Paul

14: 597-686 (July) 1931

Radio and Quack Medical Propaganda. H. A. Bellows, Minneapolis.—p. 597.
Sketch of the Early History of American Medical Association. E. S. Judd, Rochester.—p. 602.
Experiences in County Medical Organization. T. Wiprud, Milwaukee. —p. 605.
Point of View in Medicine. E. C. Hartley, St. Paul.—p. 611.
Institutional Care of Tuberculosis. H. A. Burns, Walker.—p. 618.
Tuberculosis of Anus and Rectum. C. K. Petter, Oak Terrace, and W. A. Fansler, Minneapolis.—p. 622.
Carcinoma of Colon and Sigmoid. F. C. Schuldt, St. Paul.—p. 627.
Acute Mechanical Obstruction of Lower Bowel. J. A. Johnson, Minneapolis.—p. 635.
Acute Abdomen. R. T. Knight, Minneapolis.—p. 643.
Extra-Ocular Muscle Paralysis Following Spinal Anesthesia. K. R. Fawcett, Duluth.—p. 648.
Allergy, Anaphylaxis and Hypersensitiveness. A. V. Stoesser, Minneapolis.—p. 650.

Northwest Medicine, Seattle

30: 299-348 (July) 1931

Management of Difficult Labor. G. Heusinkveld, Denver.—p. 299.
Hyperemesis Gravidarum: Underlying Principles in Its Treatment. A. W. Holman, Portland, Ore.—p. 305.
Relationship of Quinine Tolerance to Thyroid Secretion. I. Bram, Philadelphia.—p. 308.
Pain of Renal Origin. A. H. Peacock, Seattle.—p. 313.
Reducing Venereal Disease in Washington, The How. W. R. Jones, Seattle.—p. 315.
Chronic Appendicitis in the Everett General Hospital for 1930. S. E. C. Turvey, Everett, Wash.—p. 318.
Is Insulin Reducing Diabetic Mortality? Conclusions from a Study of Diabetic Deaths in Washington in 1929. L. J. Palmer, Seattle.—p. 319.
Heart Beat and Respiration in Total Novacain Analgesia. G. R. Vehrs, Salem, Ore.—p. 322.
Spinal Anesthesia and Trendelenburg Position. D. Metheney, Seattle. —p. 329.
The Acute Ear. A. H. Norton, Eugene, Ore.—p. 330.
Delayed Ulnar Palsy: Case. D. G. Dickerson, Seattle.—p. 334.
Historical Sketch of Cholelithiasis. K. K. Sherwood, Redmond, Wash. —p. 335.

Public Health Reports, Washington, D. C.

46: 1671-1725 (July 17) 1931

Physical Examination as Instrument of Research. R. H. Britten.—p. 1671.
New Subspecies, Radicans, of Alcaligenes Faecalis. Alice C. Evans. —p. 1676.
Effect of Fumigation on Cockroaches on Ships. C. L. Williams.—p. 1680.

Texas State Journal of Medicine, Fort Worth

27: 203-272 (July) 1931

Cancer Problem. W. C. MacCarty, Rochester, Minn.—p. 211.
Postoperative Mortality. C. H. Harris, Fort Worth.—p. 213.
Curative and Preventive Medicine. W. B. Sharp, Galveston.—p. 217.
General Practitioner's Part in Preventive Medicine. W. H. Moursund, Dallas.—p. 219.
Fundamental Principles in Rural Health Administration. C. C. Applewhite, Jackson, Miss.—p. 222.
Relapsing Fever Endemic in Texas: Possibility of an Animal Reservoir. M. Graham, Austin.—p. 226.
Need of Research in Functional Disorders. J. Kopecky, San Antonio. —p. 228.
Syphilis from Laboratory Viewpoint. J. L. Goforth, Dallas.—p. 230.
Anemias of Prenatal State. H. Leigh, El Paso.—p. 234.
Spina Bifida. E. W. Bertner, Houston.—p. 236.
Open Operation in Treatment of Fractures. W. B. Carrell, Dallas.—p. 238.
Undulant Fever, with Report of Case. W. S. Barcus and May Owen, Fort Worth.—p. 241.
Atypical Case of Encephalitis. W. L. Allison, Fort Worth.—p. 244.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, Bristol

19: 1-170 (July) 1931

Some Bygone Operations in Surgery: V. Lithotrity; Case of Emperor Napoleon III. D. Power.—p. 1.
Preservation of Ileocecal Sphincter in Resection of Right Half of Colon. W. H. Ogilvie.—p. 8.
*Chronic Follicular Gastritis: Nine Cases. R. R. Fitzgerald.—p. 25.
Chondrosarcoma of Fibula. A. V. Neale and E. D. Allen-Price.—p. 47.
Time Factor During Which Vascular Responses Persist Following Periarterial Sympathectomy. L. Rogers.—p. 52.
Papilliferous Cystoma of Petrous Bone Associated with Hypernephroma and Cystic Pancreas. G. Jefferson and R. Whitehead.—p. 55.
Clinical Study of Acute Appendicitis in Old Age. J. Lewin.—p. 63.
Contribution to Surgery of Pituitary Region: Four Cases of Pituitary Tumor Treated by Radon Seeds. L. B. Rawling.—p. 68.
Traumatic Arrest of Epiphyseal Growth at Lower End of Tibia. B. McFarland.—p. 78.
*Carcinoma of Thyroid Gland. T. P. Dunhill.—p. 83.
Pathology and Treatment of Tumors of Carotid Body. H. H. Stewart. —p. 114.
*Operative Treatment of Pott's Paraplegia. G. R. Girdlestone.—p. 121.
*Sialography: Its Technic and Applications. R. T. Payne.—p. 142.
Two Cases of Carcinoma of Small Intestine. O. H. Williams, W. R. Williams and R. H. Mole.—p. 149.

Chronic Follicular Gastritis.—In the nine cases of chronic follicular gastritis reported by Fitzgerald there were symptoms or signs suggesting chronic ulcer, but ulcer was not found at operation or in the gross specimen. In all cases microscopic study of the portion of the stomach removed at operation showed a characteristic lesion, of which the most prominent change was infiltration of the mucous membrane by inflammatory cells, in places forming large follicles with germinal centers. Critical study of the results of partial gastrectomy in the author's series and in the cases in the literature shows that the operation cures or gives relief in most cases and fails only in a small number. Until the etiology is known, partial gastrectomy should be the treatment of choice when conservative measures fail. Pyloromyotomy probably has a place in cases in which pylorospasm is present, although it will not guarantee freedom from the possibility of subsequent hemorrhage or cancer.

Carcinoma of Thyroid.—Dunhill emphasizes that a nodule in a thyroid should not be regarded as of no importance and early changes in the signs or symptoms associated with it should induce the practitioner to investigate the cause of these changes. Microscopic examination should be made in every case of removal of thyroid tissue, and sections should be taken from different areas. Advanced cases should not be regarded as hopeless. When the condition of the patient justifies it, as much of the tumor should be removed as possible and then roentgen treatment should be commenced. By this means, comfort is given to the patient and life is sometimes prolonged to a surprising extent.

Treatment of Pott's Paraplegia.—Girdlestone believes that if laminectomy is to be employed for Pott's paraplegia it should always be supplemented by grafting. Good technic of such grafting is vital, for the grafts have to bridge the laminectomy opening without absorption, and because the strain on grafts in Pott's disease is often great. Therefore the grafts must be strong and be given a vascular and osseous bed or there will be risk of their absorption or fracture. It is for this purpose that the author separates from each spinous process lateral flakes of bone with their periosteum intact, and a good vascular supply from the erector spinae. At the end of the operation these lie with their raw surfaces in contact with the grafts; thus they provide an almost continuous series of vascular ossific nodes ready to vitalize and recolonize the grafts. Emphasis is laid on the continuous immobilization of the whole spine before, during and after operation.

Sialography.—Payne defines sialography as the roentgen demonstration of the ducts of the salivary glands by means of the injection of substances opaque to roentgen rays. The method is of necessity one of strictly limited applicability, yet it may be claimed that its use has added to the pathologic, diagnostic and therapeutic knowledge of diseases of the salivary glands. In practice, anatomic considerations usually limit the investigation to a study of the ducts of the parotid gland; and, although it has also been applied to the submaxilliary gland, it is difficult to believe it can often be of use here. The technic of sialography of the parotid, with iodized poppy-seed oil as a medium, is described and it is shown to be a simple and a safe procedure. By means of its application the normality or otherwise of the parotid duct and its branches can be demonstrated, and in pathologic conditions affecting the gland the information so gained may render diagnosis more exact and consequent treatment more rational. Four cases are described in which sialography yielded useful information. In the first it was possible to demonstrate that a parotid fistula was strictly glandular in type; in the second a pathologic dilatation of the smaller ducts was shown following recurrent subacute parotitis; in the third the markedly dilated condition of the whole of the parotid duct was shown in association with a calculus, together with absent filling of the smaller ducts; and in the fourth case the normality of the ducts was demonstrated in a case of Mikulicz's disease.

Heart, London

15: 305-407 (July 27) 1931

*Angina Pectoris Associated with High Blood Pressure and Its Relief by Amyl Nitrite: Nothnagel's Syndrome. T. Lewis.—p. 305.
Further Observations on Variety of Raynaud's Disease, with Especial Reference to Arteriolar Defects and to Scleroderma. T. Lewis and E. M. Landis.—p. 329.
Supplementary Notes on Reactions of Vessels of Human Skin to Cold. T. Lewis.—p. 351.
Observations on Muscular Pain in Intermittent Claudication. T. Lewis, G. W. Pickering and P. Rothschild.—p. 359.
*Observations on Arteriovenous Anastomoses in Human Skin and in Bird's Foot with Especial Reference to Reaction to Cold. R. T. Grant and E. F. Bland.—p. 385.

Angina Pectoris.—Lewis states that among the various forms of angina there is one type in which the attacks of pain are associated with high pulse rate and blood pressure. He illustrates this type by four new cases and by four derived from past records. The syndrome is ordinarily found in males suffering from free aortic regurgitation. The attacks are frequent and often nocturnal, and the pain is accompanied by severe palpitation. General pallor is not a feature of the attack; on the contrary, flushing often occurs. Respiratory disturbance is the rule. The signs in the attack indicate vasoconstriction, occurring mainly in the visceral vessels. This vasoconstriction does not result from pain, since it precedes the pain. The pain is shown not to be the simple consequence of raised blood pressure. There is no constancy between the occurrence of given pressures and pulse rates and the appearence of pain. It is suggested that the coronary vessels are involved in the general vasomotor storm and that this factor is one that interferes with what would otherwise be a critical relation between work done by the heart and pain. This form of angina is particularly susceptible to the action of amyl nitrite; the effects of the drug are not to be ascribed to simple lowering of blood pressure but in part, if not in chief part, to dilatation of the coronary vessels. The syndrome is to be distinguished clearly from that described by Nothnagel. His cases were not cardiac cases, nor is anginal pain essential to his syndrome. The attacks took a form suggestive of general vasoconstriction with pallor of the extremities, in response to exposure to cold. An exaggerated vasoconstriction in response to cold, the remaining symptoms being a simple consequence of vasoconstriction, would in fact explain his cases.

Arteriovenous Anastomoses.—According to Grant and Bland, in man, many arteriovenous anastomoses are present in the sole of the foot and palm of the hand and they are particularly numerous at the ends of the digits. These are the parts that react strongly to cold, the reaction being best displayed where anastomoses are most numerous. Though other parts of the body yield a temperature reaction in the absence of arteriovenous anastomoses, reasons are given for believing that in the extremities the anastomoses not only take part in this vascular reaction but are chiefly responsible for the increased flow of blood. Because of their activity under various conditions and their presence in large numbers in certain parts of the animal body, arteriovenous anastomoses require to be taken into account when one is dealing with the peripheral circulation.

Indian Medical Gazette, Calcutta

66: 363-422 (July) 1931

Anemia of Pregnancy. S. Mitra.—p. 363.
Hemangiomatous Myofibromas of Uterus. N. Gupta.—p. 379.
Oriental Sore. J. D. Warma.—p. 383.
Value of "Sergents' Method" for Detecting Malarial Infection in Mosquitoes. C. Strickland and D. N. Roy.—p. 388.
Atropine in Cholera. A. N. Sen.—p. 390.

Journal of Pathology and Bacteriology, Edinburgh

34: 401-596 (July) 1931

Simple, Delicate and Rapid Method of Detecting Formation of Acetylmethylcarbinol by Bacteria Fermenting Carbohydrate. R. A. Q. O'Meara.—p. 401.
Autohemagglutination. W. Boxwell and J. W. Bigger.—p. 407.
Acetaldehyde as Fixative for Neuroglia. J. Gough.—p. 419.
Mitochondrial Changes in Experimental Oxalate and Uranium Nephritis. J. Gough.—p. 423.
Classification of Monilias by Serologic Methods. K. Stone and L. P. Garrod.—p. 429.
Compression Fracture of Fourth Lumbar Vertebra of Calf. T. Hare.—p. 437.
Action of Congo Red on Streptococcal Hemolysin and on B. Welchii Hemolysin. J. Gordon.—p. 439.
Malignant Pheochromocytoma of Adrenals. E. S. J. King.—p. 447.
Epizootic Produced by Hemolytic Streptococcus in Laboratory Guinea-Pigs with Abscess Formation. W. W. Beattie.—p. 453.
Further Observations on Testicular Extract and Its Effect on Tissue Permeability. D. McClean.—p. 459.
Interactions of Staphylococcus Toxin Anatoxin and Antitoxin. F. M. Burnet.—p. 471.
Lesions of Adrenal Glands of Rabbits Caused by Infection with Herpes Virus. W. Smith.—p. 493.
New Series of Graded Collodion Membranes Suitable for General Bacteriologic Use, Especially in Filtrable Virus Studies. W. J. Elford. —p. 503.
Strain of Bacterium Aertrycke with Unusual Epidemic Characters. W. W. C. Topley, M. Greenwood and Joyce Wilson.—p. 523.
New Serologic Type of Salmonella. P. R. Leslie and A. G. Shera.—p. 533.
Preparations of Fractions of Different Antitoxic Quality from Same Serum. Mollie Barr and A. T. Glenny.—p. 539.
Enzootic Hepatitis or Rift Valley Fever: Undescribed Virus Disease of Sheep, Cattle and Man from East Africa. R. Daubney and J. R. Hudson.—p. 545.

Medical Journal of Australia, Sydney

1: 771-798 (June 27) 1931

Influence of Etiologic Factors on Prognosis and Treatment of Mental Disorders. R. G. Williams.—p. 771.
Surgical Treatment of Prostatic Obstruction. A. S. Roe.—p. 775.
Toxicity of Melia Azedarach, "White Cedar." H. R. Seddon.—p. 778.
Note on Sensory Characters of Nipple and Areola. F. Wood-Jones and J. B. Turner.—p. 778.
Fractures of Maxillary Zygomatic Region and Their Treatment. H. S. Stacy.—p. 779.
Poisoned Spears of Australian Aborigines. J. MacPherson.—p. 780.

2: 1-34 (July 4) 1931

Snake Venoms and Antitoxic Immunity. C. H. Kellaway.—p. 1.
Value of Cholecystography in Diagnosis. Annie L. Bennett.—p. 12.
Swift's Disease. C. H. Dickson.—p. 14.

2: 35-64 (July 11) 1931

Immunity of Australian Snakes to Their Own Venoms. C. H. Kellaway. —p. 35.

China Medical Journal, Shanghai

45: 583-702 (July) 1931

Edema and Ascites in Chinese Patients. S. D. Sturton.—p. 584.
Appendicitis: Report of 120 Cases Treated at Soochow Hospital, 1926 to 1931. J. A. Snell.—p. 626.
Transplantation of Ureters Into Sigmoid: Report of Three Operations in Two Cases of Exstrophy of Bladder. P. B. Price.—p. 634.
Simple Medium for Isolation from Feces of B. Typhosus, B. Paratyphosus and Dysentery. Y. T. Choi.—p. 644.
Bromine Water Test for Pregnancy. A. C. Siddall, S. F. Hui, H. W. Ha and W. H. Wong.—p. 646.
Caustic Alkali Poisoning and Its Treatment. D. M. Black.—p. 649.

Japanese Journal of Experimental Medicine, Tokyo

9: 151-332 (June 20) 1931

Biologic Significance of Lung Journey of Ancylostoma Larvae in Normal Host. Y. Miyagawa and R. Okada.—p. 151.
Experimental Studies on Oral and Percutaneous Infection of Ancylostoma Caninum: Rate of Primary Infection, Reinfection and Superinfection in Normal Host, Dog. R. Okada.—p. 209.
Id.: Destiny of Mature Larvae of Ancylostoma Caninum Introduced Orally and Percutaneously. R. Okada.—p. 223.
Id.: (Third Report). R. Okada.—p. 277.
Id.: (Fourth Report). R. Okada.—p. 269.
Studies on Etiologic Relationship Between Smallpox and Sheep Pox, and Prophylactic Vaccination Against Sheep Pox. H. Kasai.—p. 281.

Journal of Oriental Medicine, Dairen

14: 53-61 (June) 1931

Ossification of Larynx in Chinese. M. Sayama.—p. 53.
Vasotomy-Radiography of Seminal Ducts. H. Yanagihara and T. Miyata.—p. 55.
Studies on Zondek-Aschheim's Pregnancy Reaction. I. Diagnostic Value in Pregnancy. S. Kuga.—p. 56.
Id.: II. Distributions of So-Called Hormone of Frontal Lobe of Hypophysis Cerebri. S. Kuga.—p. 57.
Influence of Castration on Tuberculosis. M. Ommyoji.—p. 58.
Biochemical Studies on Hydrocyanic Acid: 5. On Resistance of Erythrocytes to Some Hemolyticas. F. Kudo.—p. 59.
Blood Cyst in Lateral Region of Neck: Case. Y. Kitaura.—p. 60.

Annales de Médecine, Paris

29: 449-660 (May) 1931

Recrudescence of Diphtheria. J. von Bokay.—p. 451.
Biologic and Immunologic Study of Diphtheria. R. Debré, G. Ramon and P. L. Thiroloix.—p. 460.
Diphtheria in Army Since World War. C. Dopter and Collignon.—p. 496.
Latent Infection in Diphtheria. U. Friedemann.—p. 509.
Epidemiology of Diphtheria. E. Gorter.—p. 530.
Schick Test. H. Hirszfeld and H. Hirszfeld.—p. 535.
Renal Function in Diphtheria. P. Lereboullet, J. J. Gournay and J. Donato.—p. 547.
Antidiphtheritic Serum and Serotherapy. G. Ramon and R. Debré.—p. 587.
*Paralysis of Brachial Plexus After Antidiphtheritic Serotherapy. H. Roger, C. Mattei and J. Paillas.—p. 610.
Influence of Tonsillectomy and Adenoidectomy on Immunity Against Diphtheria. Bela Schick and Anne Topper.—p. 628.
Affinity Between Toxins and Specific Antitoxins. S. Schmidt.—p. 635.
Diphtheria in Berlin. E. Seligmann.—p. 638.

Paralysis of Brachial Plexus.—Roger and his associates report nine cases of paralysis of the brachial plexus following antidiphtheritic serotherapy, two their personal cases and seven reported recently in the French medical literature. They review thoroughly the literature on the subject and conclude by emphasizing the rarity of paralysis in antidiphtheritic serotherapy. They state that altogether there have been reported seventy cases of complications following the administration of various kinds of serums. The complications are usually curable. They amount to nothing in comparison with the millions of persons efficaciously treated with these serums.

Archives des Maladies du Cœur, etc., Paris

24: 273-336 (May) 1931

Prolonged Regular Tachycardia: Two Cases. L. Langeron.—p. 273.
*Paroxysmal Adams-Stokes Syndrome Caused by Sinusal Bradyarrhythmia. E. Géraudel.—p. 288.
Function of Arteries and Veins in Normal Man. A. Luisada.—p. 305.

Adams-Stokes Syndrome.—Géraudel reports a case of Adams-Stokes syndrome caused by sinusal bradyarrhythmia. On the basis of fifty electrocardiograms that he made in this case he draws the following conclusions: From the clinical point of view the Adams-Stokes syndrome was brought on by a sinusal bradyarrhythmia. This syndrome may be caused by various conditions, as sinoventricular block, sinusal bradyarrhythmia and presystolic arrhythmia. A complete term should specify the pathogenic type of Adams-Stokes syndrome.

Journal de Chirurgie, Paris

37: 641-800 (May) 1931

*Rupture of Rectum Due to Effort. M. Guibé.—p. 645.
Perineal Amputation of Rectum. P. Huet and G. Mihailesco.—p. 657.
Pseudarthroses of Neck of Femur: Etiology and Treatment. P. Funck-Brentano.—p. 666.
Extirpation of Carotid Gland in Epilepsy. E. Lauwers.—p. 686.

Rupture of Rectum Due to Effort.—Guibé reports a case of rupture of the rectum due to effort. He states that it is a rare condition. It affects mostly old women on account of the peculiar anatomic and pathologic conditions of the perineum and anus in these subjects. The cause of rupture in most cases is an abdominal effort, most often an effort of defecation, necessitated by obstipation, which is so common in old people. It may be caused also by violent vomiting or by an attempt to lift a heavy object. The mechanism of the rupture is simple and is easy to understand. It always involves the peritoneal wall of the rectum; i. e., it is the anterior wall that is lacerated. As it occurs mostly during defecation, the patient suddenly feels a sharp pain in the hypogastric region, which at times may

cause even syncope. At the same time he observes bleeding, which often may be of a serious character. He feels also a large tumor that has been formed from the prolapsed intestine. There appear early all the general symptoms of rupture of the intestine. The author outlines the method of treatment, which has to be employed as early as possible. It is, of course, surgical intervention with variable technic and approach, depending on the circumstances in the case.

Revue Belge des Sciences Médicales, Louvain

3: 449-632 (May) 1931

Gas of Blood: Technic of Determination and Clinical Applications. G. Étienne and M. Verain.—p. 449.
Chloride Metabolism in Nephritis. P. Merklen.—p. 459.
*Diabetes Resistant to Insulin. M. Labbé.—p. 465.
Filtrable Tuberculous Virus. F. Arloing.—p. 494.
Acute Myelogenous Leukemia and Agranulocytosis. J. Sabrazès and F. Bonnel.—p. 501.
Eosinophilia of Sputum in Asthma. F. Bezançon.—p. 513.
Pernicious Anemia. O. Naegeli.—p. 524.
Traumatic Miliary Tuberculosis. J. Firket.—p. 533.
Detection of Varying Degrees of Hemophilia. J. Roskam.—p. 549.
*Bronchial Asthma and Its Treatment. A. Haibe.—p. 564.
Onchocerca Volvulus Infestation in a European. J. Rodhain and A. Dubois.—p. 613.
Atypical Aspects of Glomus Tumors. A. Dupont.—p. 624.

Diabetes Resistant to Insulin.—In a comprehensive study of diabetes, Labbé noted reports of cases that were designated as resistant to treatment with insulin. However, he considers them false cases; i. e., cases that were erroneously interpreted or poorly treated by incorrect administration of insulin. He concludes by stressing the point that true resistance to insulin has the following three characteristics: 1. In a diabetic patient who is placed on a proper and definite regimen, insulin does not reduce either the glycosuria or the ketosis. 2. To combat the glycosuria and acidosis and to maintain the equilibrium of nutrition it is necessary to inject excessive doses of insulin into a diabetic patient who is under a proper regimen. 3. Insulin administered subcutaneously or intravenously in doses usually employed in the test of hypoglycemia does not reduce the glycemia or reduces it less than one would ordinarily observe in diabetic patients.

Bronchial Asthma.—Haibe reports twenty-four cases of bronchial asthma. He gives a comprehensive description of his studies on the subject and concludes by emphasizing the following facts: Bronchial asthma occurs in humid and foggy climates, which predispose to respiratory catarrhs; these conditions create pulmonary disorders, which in persons with humoral and vagosympathetic disequilibrium usually provoke asthma. The hemolytic streptococcus plays the most important part in the pathogenesis of these pulmonary disorders and the staphylococcus in cases complicated by rhinopharyngitis. Bacteriotherapy, if employed for a long time and regularly, produces a strong immunity against the causal micro-organisms; this immunity leads to a cure of the pulmonary disorders as well as of the asthma itself. The therapy is much more efficacious if it is given as soon as possible and before the disease is in an advanced stage. Finally, the author's method should be considered the treatment of choice in the treatment of bronchial asthma.

Revue de Chirurgie, Paris

50: 299-375 (May) 1931

Sacrococcygeal Malformations. H. L. Rocher and G. Roudil.—p. 299.
Phalangization of First Metacarpal. P. Bonnet and F. Carcassonne.—p. 341.
*What Proportion of Perforated Peptic Ulcers Operated on Remain Cured? F. Tondeur.—p. 356.

Cure in Perforated Peptic Ulcer.—Tondeur studied the problem of permanent cure in persons with perforated peptic ulcer. In all he observed forty-five such persons, of whom thirteen were examined repeatedly. There were good as well as poor postoperative results. Among persons with perforated peptic ulcer who were operated on in time, the results in 54 per cent were so good that one could consider the patients cured; of the remainder, 30 per cent gave clinically satisfactory results. Thus, more than 80 per cent of the persons with perforated peptic ulcer were cured by the same procedure, namely, suture of the ulcer, with or without omentoplasty, then gastroenterostomy.

Revue Française de Gynécologie et d'Obst., Paris

26: 257-304 (May) 1931

Maternity Houses. P. Trillat.—p. 257.
*Coincidence of Typhoid with Puerperium. J. Rhenter.—p. 290.
Postpartum Phlebitis of Four Extremities: Subacute Venous Septicemia: Fixation Abscess. C. Gonnet.—p. 296.

Coincidence of Typhoid with Puerperium.—Rhenter reports his observations on nineteen cases of typhoid that occurred during the puerperium. Seven of the patients became infected during the last trimester of the gestation period. His conclusions are as follows: 1. It does not seem that gravidas possess a special immunity against *Bacterium typhosum*. 2. Typhoid that develops during gestation is apparently not aggravated and interruption of the pregnancy does not change markedly its course. The severity of the infection seems considerably increased, however, when it makes its appearance during the puerperium. 3. In half the persons observed the gestation was interrupted by abortion or premature labor. Their frequency appears to be connected with the severity of the infection. 4. Premature infants of women with typhoid are often affected with severe debility. Those born at term are normal and their development does not seem to be affected. 5. The coincidence of gestation should not change the classic treatment of typhoid. Nursing should, in general, be forbidden.

Riforma Medica, Naples

47: 749-788 (May 18) 1931

*Potassium Content of Blood in Patients with Malignant Tumors. C. Giacobbe.—p. 751.
Bartonellosis in Splenectomized Rats. C. Cossali.—p. 754.

Increase in Blood Potassium in Malignant Tumors.—Giacobbe brings out that, of the many chemical researches on malignant neoplasms, one that has considerable interest is the investigation of the potassium content of the blood in malignant tumors. The observations of the various investigators have been contradictory, some contending that there is an increase of potassium in the tissues of tumors of rapid growth, while others state that there is no such increase, or that, if there is a moderate increase, it has no diagnostic value. The author studied the behavior of the potassium content of the blood in tumors and found constantly an increase in all the forms of malignant neoplasms, particularly in the epithelial types. The hyperpotassiemia was found to be proportionate to the state of activity and the evolution of the neoplasm. After the removal of the tumor there was always a lower potassium index of the blood.

Tumori, Milan

5: 201-302 (May-June) 1931

Researches on Enzyme Reaction. V. Carminati.—p. 201.
*Rate of Sedimentation of Red Corpuscles in Malignant Tumors. E. Codeleoncini.—p. 220.
Cancer of Liver in Girl Aged Six. P. G. Cantele.—p. 233.
Papilloma of Nose and of Maxillary Sinus. G. Massione.—p. 258.
Fibroma of Mammary Gland: Case. A. Anelli.—p. 286.

Rate of Sedimentation of Red Corpuscles in Malignant Tumors.—Codeleoncini studied the rate of sedimentation of red corpuscles in 200 cases of malignant tumors. After a discussion of the genesis and the significance of normal and pathologic states, he surveys, with reference to malignant tumors, the observations of other authors. He found in a high percentage of cases that the rate of sedimentation is dependent on the malignancy of the tumor, and more particularly in tumors developing from cylindric epithelium and in medullary tumors. The values vary likewise with the site of the tumor and with the various times at which the sedimentation is tested.

Archiv für Verdauungs-Krankheiten, Berlin

49: 263-374 (June) 1931

*Digestion from Closed Plant Cells and Its Significance for Physiology and Pathology of Digestion in Human Beings: Digestion of Gluten Cells of Wheat. W. Heupke.—p. 263.
*Digestion of Gluten Cells of Rye. W. Heupke.—p. 272.
Gastritis Problem in Light of Modern Functional Tests of Stomach: Achylia Gastrica. W. Schemensky and J. Geling.—p. 282.
Cholelithiasis and Diabetes Mellitus. I. Freund.—p. 302.
Is It Possible That a Previous Malaria with Intestinal Disturbances Is the Causal Factor of Periodically Recurring Irritations and Ulcerations in Colon? R. Schorlemmer.—p. 313.

Dietary Treatment of Exophthalmic Goiter. M. E. Bircher.—p. 332.
Influence of Test Breakfast of Infusion of Cabbage Powder on Gastric Secretion in Human Beings. B. Trusewitsch and J. Schapiro.—p. 338.
*Gastric Secretion in Cholecystopathies. J. E. Lantodub.—p. 347.
Secretory Stimulation and Gastric Secretion. O. B. Makarewitsch, S. M. Melbard and A. B. Solomonow.—p. 355.

Digestion of Gluten Cells of Wheat.—Heupke demonstrates that the protein-splitting ferments of the human intestinal tract penetrate into the thick-walled gluten cells of wheat and liberate the largest portion of the protein compounds, without a previous mechanical opening of the cell walls. The author deplores the fact that in most flours used for bread making the bran and with it a large portion of the valuable grain protein have been removed.

Digestion of Gluten Cells of Rye.—In this paper Heupke shows that in the test tube the largest part of the protein of the gluten cells is digested by pepsin and trypsin without the cell walls being opened. The ferments must therefore be capable of penetrating the unopened wall of the gluten cells of rye. This indicates that the largest portion of protein is digested in the upper portions of the intestine. He compares the utilization of rye protein and of wheat protein by the human organism and the food value of the two.

Gastric Secretion in Cholecystopathies.—In order to determine whether disorders in the biliary system influence the gastric secretion and also to determine whether, as some investigators assert, there is a parallelism between the decrease in acidity and the duration of the biliary disorder, Lantodub studied 210 cases. He detected subacidity and achylia in 36 per cent of the patients with cholecystopathy. This indicates that these conditions do not concur with disorders of the biliary tract as frequently as is commonly assumed. A parallelism between the duration of the cholecystopathy and the behavior of the gastric secretion could not be detected. The decrease in the acidity, which is sometimes observed during cholecystopathy is not necessarily its result but may be caused by a simultaneously existing disorder of the gastro-intestinal tract or by some other simultaneously existing disease. Achlorhydria cannot be considered as a causal factor of gallstone disease, for according to the author's observations diseases of the biliary tract concur more often with hyperacidity or with normal acidity.

Beiträge zur Klinik der Tuberkulose, Berlin

77: 267-426 (May 15) 1931

Hematogenic Pulmonary Tuberculosis. H. Ulrici.—p. 267.
*Surgical Treatment of Pulmonary Tuberculosis. W. Denk and E. Domanig.—p. 320.
Influence of Influenza on Pulmonary Tuberculosis. S. Puder.—p. 351.
Frequency of Calcified Mesenteric Lymph Nodes in Roentgenogram. H. Oehmigen.—p. 361.
Riding Pleural Exudates. J. E. Wolf.—p. 375.
Pulmonary Atelectasis. A. Hartung.—p. 387.
Results of Sauerbruch-Herrmannsdorfer's Salt-Free Dietary Treatment in Patients with Pulmonary Tuberculosis. W. Münchbach.—p. 395.
Value of Solution of Benzine in Oil in Treatment of Pulmonary Tuberculosis. J. Kairiukstis.—p. 412.
Healing of Caverns. A. Albert.—p. 415.
Dermoid Cyst with Mural Calcification of Right Pulmonary Pleura. O. Steinmeyer.—p. 418.
Growth Law of Tuberculous Lymphomas. L. Karczag.—p. 422.

Surgical Treatment of Pulmonary Tuberculosis.—Denk and Domanig base their report on twelve years' experiences. In the first part of the article they discuss thoracoplasty, which they performed on 175 patients. In regard to the indications for total thoracoplasty they state that, if the process is mainly unilateral, the intervention can be done even in the presence of extremely severe lesions. As contraindications they consider: serious irreparable impairment of the general condition and of the circulation, a rapid course of the disease, severe diseases of other organs, which are refractory to treatment, and finally an age of over 60 years. With paravertebral resection of the ribs the compression of the thorax is in proportion to the extent of the resection. The length of the resected portions of ribs should therefore correspond to the position and size of the caverns. The authors think it most advisable to do thoracoplasty in two stages. In regard to anesthesia they state that besides a local anesthetic a superficial general anesthesia can be induced without injurious results. Most postoperative fatalities are due to pulmonary or circulatory complications. Patients in whom the disease process is in the right lung, whose general condition and circulation are poor, and in whom the phthisis has an exudative, progressive character with extensive cavern formation are especially in danger. The permanent results of thoracoplasty are primarily dependent on an adequate compression of the diseased lung, on the condition of the other lung and on the severity and extension of the process. Suitable and sufficiently prolonged treatment is of essential significance. Regular after-examinations are also advisable, and, in patients in whom the result of the thoracoplasty is found to be inadequate, supplementary plastic operations are often helpful. In tuberculous pneumothorax with mixed infection, surgical treatment should be done as early as possible. The authors warn against open thoracotomy with resection of ribs as a preliminary operation, but they found the results of Sauerbruch's method favorable. The isolated compression (resection of the first to the eighth rib) of disease processes that are limited to the upper portion of the lung, they consider as permissible, in combination with phrenic exeresis. Plombierung did not give satisfactory results in these cases. After reviewing the other cases (thirty in all), in which they resorted to plombierung, the authors discuss phrenic exeresis, which they performed in 142 cases. They maintain that phrenic exeresis should be done only by experienced surgeons. In serious forms of pulmonary tuberculosis, phrenic exeresis without the addition of some other collapse therapy is of little therapeutic value. In less severe and fresh processes, pirenic exeresis combined with pneumothorax treatment is often helpful; and even without a simultaneous pneumothorax it may be successful in the light and incipient cases.

Deutsche Zeitschrift für Chirurgie, Berlin

231: 449-532 (June 3) 1931

*Causes of Failures in Artificial Paralysis of Diaphragm. M. Ernst.—p. 449.
*Substitute for Implantation Prosthesis and for Osteoplasty in Resection of Jaw. F. Spanier.—p. 456.
*Nonsurgical Treatment of Habitual Dislocation of Lower Jaw, Especially in Prognathism. E. Reichenbach.—p. 470.
*Osmotherapy (Dehydration) in Cerebral Pressure. R. Wanke and C. Ramm.—p. 477.
Intracranial Chondroma as Cerebral Tumor. H. Brütt.—p. 497.
Mode of Infection in Postoperative Parotitis. E. Seifert.—p. 503.
General Interstitial and Secondary Mediastinal Emphysema Following Attempted Pneumothorax: Its Surgical Treatment. Wanstmann.—p. 506.
Subcutaneous Tearing of Abdominal Wall Without Internal Injury. H. Reinhardt.—p. 510.
Unusual Injury with Pointed Instrument. H. Reinhardt.—p. 512.
Arterial Embolism of Arm: Two Cases. A. Dzialoszynski.—p. 514.
Results of Treatment in Fracture of Neck of Femur. Wustmann and H. Albrecht.—p. 516.
Experiences with Endovesical Cold Cauterization in Hypertrophy of Prostate. M. Kappis.—p. 522.

Causes of Failures in Artificial Paralysis of Diaphragm.—Ernst states that in seven patients normal movements of the diaphragm were observed following phrenic exeresis. In four cases the after-operation revealed the nerve in the typical position; it had evidently not been found during the primary intervention. In two patients abnormal anatomic conditions existed (variations in the musculature of the neck, abnormal position of the phrenic trunk). In one patient the paralysis, which had been produced by the exeresis, had disappeared again several months later, and the diaphragmatic movements were normal again. This is probably due to the fact that the nervous stimuli were led through other channels (double phrenic nerve).

Substitute for Implantation Prosthesis and for Osteoplasty in Resection of Jaw.—Spanier states that in benign processes in the lower jaw resection is only rarely necessary. In malignant processes (sarcoma) of the lower jaw, however, resection is nearly always necessary. Since in some cases, especially when relapses may be expected, implantation prosthesis or osteoplasty, the usual methods for correction of the mutilated jaw, are not advisable, the author devised a method that he designates as maxillary fixation with intra-oral tamponade of the cheek. He describes this method and states that he obtained good cosmetic and functional results. He further states that this method is also recommendable in cases in which other contraindications, besides a danger of relapse, militate against

osteoplasty, such as advanced age of the patient, infectious diseases and unfavorable economic conditions. He emphasizes that this adjuvant procedure is not meant to replace osteoplasty entirely; on the contrary, the maxillary fixation with intra-oral tamponade of the cheek is in certain cases the best preparatory measure for a later transplantation of bone.

Nonsurgical Treatment of Habitual Dislocation of Lower Jaw.—Reichenbach reports observations that indicate a certain relation between prognathism and habitual dislocation of the lower jaw. In patients in whom these disturbances concur, the habitual dislocations usually cease as soon as the prognathism has been corrected either by operative intervention or by orthodontic measures. This is mainly due to the fact that the reestablishment of the normal condition, namely, the projection of the upper teeth over the lower ones, acts as a braking device. Several case histories are given. In the first case that is reported, the prognathism was counteracted by Lindemann's operation and thereafter the dislocations ceased. In other case reports the author shows that it is often possible to correct habitual dislocations of the lower jaw by conservative measures, such as intramaxillary elastic traction, occlusion hinges and pressure plates. The author's favorable results with these orthopedic measures convinced him that they should always be tried before surgical interventions are resorted to.

Osmotherapy (Dehydration) in Cerebral Pressure.—Wanke and Ramm direct attention to the fact that the cerebral tissues and the cerebrospinal fluid system react to every traumatic or mechanical irritation with changes in the fluid production and with an increase in the volume of the mass of the brain in the form of swelling or edema. To combat these conditions, osmotherapy (dehydration) by means of hypertonic solutions of sodium chloride or of dextrose has been recommended, for it had been found helpful in animal experiments. The authors further discuss their observations in thirty-seven cases in which they employed this treatment. They report that clinical examinations of patients following injection of hypertonic solutions of sodium chloride or of dextrose confirm the results of the animal experiments. However, in human beings the results are less marked and of shorter duration. The therapeutically effective osmotic action lasts less than an hour. Pressure of the cerebrospinal fluid and changes in the fluid content of the cerebral tissues are in causal relation with the concentration of the sodium chloride and of the dextrose in the blood. By comparative examinations it can be proved that the osmotic dehydration withdraws from the cerebral fluid system only a few cubic centimeters of fluid. Thus the effect can only be limited and of short duration, and this also explains the changeable clinical results in traumatic and in chronic cerebral pressure. In two thirds of the cases of traumatic cerebral pressure, temporary or permanent relief was obtained by one or by repeated injections of 100 cc. of a 50 per cent solution of dextrose. Quantitative tests on the cerebrospinal fluid make it appear probable that in traumatic cerebral pressure there is a space limitation as a result of an increase in the volume of the brain (cerebral swelling). Sodium chloride solutions of high concentration are unsuitable for practical use. Examples are cited which prove their detrimental influences. In the conclusion the authors warn against exaggerated therapeutic expectations from osmotherapy by means of dextrose solutions of high concentration, but in its biologic action this treatment is superior to lumbar puncture, in spite of the fact that by means of lumbar puncture a greater decrease in the cerebrospinal fluid pressure can be effected.

Zeitschrift für Krebsforschung, Berlin

34: 1-108 (June 22) 1931

Congo Red in Cultures of Normal and Neoplastic Tissues "in Vitro." A. H. Roffo and O. Calcagno.—p. 1.
*Feeding of Rats with Irregular Doses of Vitamin Resulting in Histologic Changes Particularly in the Gastro-Intestinal Tract: Genesis of So-Called Feeding Tumors. E. Müller.—p. 10.
Cancer Mortality in Ukraine. A. M. Merkow.—p. 21.
Biochemical Dynamics of Regeneration Tissue. F. Bricker and J. Lazaris.—p. 35.
*Biologic Relationship Between Tar and Inoculation Carcinomas in Mice. H. Koenigsfeld.—p. 38.
Studies on Tumor Immunity. F. Ottensooser.—p. 45.
Protein Reactions and Tumor Formations: Etiology of Tumors. D. Kostoff.—p. 65.
Teratoma of Cancroid Character from Abdominal Cavity of Rooster. Silvia von Bornstedt and H. Röhrer.—p. 80.
Polymorphocellular Angiosarcoma of Mammals Transmittable by Filtrates. I. L. Kritschewski and P. L. Rubinstein.—p. 85.
Irradiation in Treatment of Cancer of Uterus. A. Döderlein.—p. 99.

Feeding with Vitamin Resulting in Histologic Changes.—Müller found that by changing the food, particularly the vitamin content, it was possible to produce in rats a metabolic disturbance and injurious changes in the mesenchymal cells, especially the reticulo-endothelial system. These changes may produce a predisposition for tumor development, as is proved by the frequent occurrence of spontaneous tumors in such feeding experiments. However, histologic examination revealed neither a predisposition for tumor development in certain cell groups nor a preliminary stage of tumor formation.

Relationship Between Tar and Inoculation Carcinomas in Mice.—After reviewing the literature on tar tumors, Koenigsfeld describes his experiments on mice with tar application and inoculation of carcinoma. The results of his experiments are summed up as follows: 1. More than four months after the beginning of the tar application, tar warts commenced to form in the animals that had been treated uninterruptedly as well as in those in which the application of tar had been discontinued after three months. 2. The tar tumors were more developed in the animals in which the application of tar was not interrupted or was resumed again after temporary interruption than in animals in which after three months the application was definitely terminated. 3. A preliminary tar application did not give protection against vaccination with transplantable adenocarcinoma. 4. On the contrary, the inoculation carcinoma developed better in the mice that had received tar applications than in the controls that had not been treated with tar. Moreover, there was no difference whether during the preliminary tar application tar tumors had formed or not; the tar application alone was sufficient to favor the growth of the inoculation tumors. 5. Immediately following inoculation with adenocarcinoma, existing tar tumors commenced to grow rapidly and attained dimensions that have not been observed in other mice with tar tumors. In mice that had received applications of tar without developing tar tumors, after inoculation of adenocarcinoma there was development of tar tumors even when the tar application had been interrupted for several months, whereas among the noninoculated control mice, which following interruption of the application of tar had no tar tumors, these did not develop during the same period. These results seem to indicate that tar tumors and inoculation carcinoma influence each other's development favorably, and that by tar application as well as by tumor inoculation the organism of mice develops a predisposition for cancer formation.

Zeitschrift für urologische Chirurgie, Berlin

33: 149-320 (June 26) 1931

Treatment of Obstructed Kidney Caused by Accessory Vessels: Technic of Ureteropyeloplasty. W. Heckenbach.—p. 149.
Operative Treatment of Urinary Incontinence in Women. J. Scherbschewsky.—p. 157.
Localized Hemorrhagic Cystitis: Anemia in Chronic Colon Bacillus Infection of Urinary Tract. H. U. Gloor.—p. 179.
*Carcinoma of Stomach with Aspects of Urogenital Disease: Case. O. Hennig.—p. 234.
Carcinoma of Urachus: Case. A. Kalo.—p. 239.
Operative Treatment of Hypertrophy of Prostate. R. Chualla.—p. 245.
*So-Called Prebladder and Its Clinical Significance. O. Hennig.—p. 302.

Carcinoma of Stomach with Aspects of Urogenital Disease.—Hennig reports the clinical history of a man, aged 47, in whom nearly all the manifest disorders, such as hard swelling of the left epididymis, infiltration of the region of the seminal vesicles, hematuria, changes in the mucous membrane of the bladder and functional deficiency of the right kidney, as well as the subjective pains, indicated a disorder of the urogenital tract. The patient died and the necropsy revealed that all these changes had been caused by a peculiar metastasis from a carcinoma of the stomach. By the spreading of the metastases along the aorta and the vena cava inferior to the small pelvis, the vessels of the bladder had become obstructed and this in turn had caused a passive hyperemia of the vessels in the mucous membrane of the bladder near the ostium, so that a tumor-like proliferation was simulated in the region of the right ostium.

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This explained also the hematuria. In what manner the carcinoma metastases had spread to the left epididymis, which had been entirely replaced by cancerous masses, could not be detected by histologic examination; the spermatic cord was free from carcinoma. The metastasis of a carcinoma of the stomach in the epididymis represents an unusual type of spread. The functional deficiency of the right kidney shortly before death was caused by a profuse extravasation of blood into the right fatty bed of the kidney, which led to compression and anemia of the kidney. This hemorrhage, which had been caused by a destruction of the suprarenal resulting from thrombosis of its vessels by carcinoma metastases, had caused the death of the patient.

So-Called Prebladder and Its Clinical Significance.—Hennig applies the term prebladder to the formation of an extensive cavity in front of the orifice of the bladder, as a rule within the fibrous capsule of the prostate and only rarely extending beyond it. The term total cavern of the prostate has also been applied to this condition. The prevailing opinion is that the condition is extremely rare. However, the author's observations convinced him that the condition is more frequent than is generally assumed. The reason that it is not more often recognized is that it concurs with other disorders of the urogenital apparatus which have more marked symptoms. Nevertheless the prebladder has characteristic aspects and can readily be recognized with the aid of cystography. The formation of the prebladder is generally preceded by a disintegration of the prostate tissues, which may have various causes. The author thinks that it is frequently caused by tuberculous processes, and he gives several case reports which indicate a tuberculous etiology. He considers gonorrheal processes as a less frequent etiologic factor; for this pathogenesis he cites two examples. Further, he discusses the so-called artificial prebladders that develop following prostatectomy. He states that about the incidence of the formation of prebladders following the various methods of prostatectomy definite figures are not available. In the large material of prostate operations in the university clinic in Halle, in which Voelcker's method was used almost exclusively, prebladder formation was rare. Of the few cases that were observed, the author gives detailed reports. In discussing the clinical aspects of the prebladder he points out that after every micturition a portion of urine is retained in the prebladder. This results in dribbling of urine for some time following micturition. Sometimes mixed infection sets in, and, because the neck of the bladder becomes involved, urinary incontinence often develops. If the prebladder is of tuberculous origin, operative treatment is usually out of the question and other forms of therapy are likewise of little avail. The prognosis is therefore generally unfavorable, for a spontaneous recovery is impossible in the advanced stages of urinary tuberculosis. In cases of prebladder that develop as the result of a gonorrheal process or following prostatectomy, however, operative treatment has often been found to be helpful.

Zentralblatt für Gynäkologie, Leipzig

53: 1889-1952 (June 13) 1931

Circulatory Conditions in Uterine Mucous Membrane Following Extirpation of Corpus Luteum. A. Westman.—p. 1890.
*Ligation of Veins in Pyemia. F. von Mikulicz-Radecki.—p. 1897.
Colpopoiesis by Means of Skin Transplantation According to Thiersch. A. Ostréil.—p. 1900.
Significance of Retroplacental Blood for Recognition of Syphilis. K. Linning and T. Frank.—p. 1902.
Manual Removal of Placenta and Inspection of Uterus. K. Heyrowsky.—p. 1907.
Bacterial Flora of Uterine Cavity. W. Afanassijew.—p. 1910.
Shortcomings and Improvement of Schauta-Stoeckel's Vaginal Operation for Cancer of Cervix Uteri. D. Maluschew.—p. 1914.

Ligation of Veins in Pyemia.—Von Mikulicz-Radecki points out that it was Martens' merit to call attention again to Trendelenburg's pyemia operation. He thinks that the discussions that followed Martens' demand for an early operation were not so much due to the difficulty of the technic as to the difficulty of an early recognition, for it was thought likely that the demand for an early operation might lead to unnecessary interventions. However, the author thinks that the extraperitoneal ligation minimizes the danger of the intervention, since the peritoneal shock involved in the intraperitoneal intervention is avoided. Statistics reveal that operative intervention improves the prognosis. In the second part of the article the author reports a serious case in which the ligation proved of great help. The clinical history of this instance indicates that in hopeless cases of pyemia, even when metastases have already developed the ligation of the veins can still be successful. The case shows also that a unilateral intervention may be sufficient if one detects and excludes the focus of pyemia. Besides being noteworthy for an unusual location of the vena spermatica, the case also proves the superiority of the extraperitoneal method, for the intraperitoneal intervention might have caused a fatal peritonitis.

Vrachebnaya Gazeta, Leningrad

No. **9:** 643-722 (May 15) 1931

*Endocrine and Biochemical Trends in Surgery. V. A. Oppel.—p. 647.
*Blood Biochemistry and Causes of Death in Acute Intestinal Obturation. N. N. Samarin.—p. 656.
Clinical Aspects of Influenza. N. K. Rosenberg.—p. 663.
Periodicity of Epidemics. N. E. Kushev.—p. 670.
*Syphilis: Puncture of Lymph Nodes as Early Method of Diagnosis. N. N. Barshev.—p. 672.
Local Treatment of Leprous Ulcers. A. A. Stein.—p. 675.
Auto-Urinotherapy in Gonorrheal Arthritis. J. M. Rabinovich.—p. 677.
Palpation by Obrastzov's Method in Recognition of Enteritis. S. D. Nosov.—p. 678.

Endocrine and Biochemical Trends in Surgery.—In the modern school of surgery Oppel recognizes two trends that are not identical: the biochemical and the endocrine. They are parallel, however, in supplementing each other and in interpreting various details and important points in surgical pathology. To emphasize these trends of modern surgery the author presents three types of metabolism that go on in the system: (1) carbohydrate, (2) calcareous and (3) chloride metabolism. He discusses the subject of hyperinsulinemia, stating that the nature of hypoglycemia in surgical patients is already known. It was proved by various investigators that hypoglycemias with acute hepatic disturbances are not accompanied by an increase in blood sugar after subcutaneous administration of epinephrine. With regard to calcium metabolism the author stresses the importance of abdominal spasmophilia. Persons with this condition are encountered quite frequently. However, instead of being examined endocrinologically they are operated on for various abdominal conditions, mostly for peptic ulcer or appendicitis. The only thing to do in regard to treatment of such persons is to increase the calcium content of their blood. The author accomplishes this by transplanting to some place of their body a piece of heterogenic bone. Contrary to tetany and spasmophilia there are two groups of calcium disturbances that as a rule are accompanied by hypercalcemia: one supervenes with calcium demineralization, with an excessive elimination of calcium in the urine and with a negative balance of calcium; the other is characterized by the arrest of calcium in the system; it goes on with a positive balance of calcium. To the first group belong such diseases as osteomalacia and generalized fibrous osteitis; to the second, ankylotic polyarthritis and progressive myositis ossificans. The author reports a case history of a person with a fibrous osteitis in the left lower extremity that had a tendency to become generalized (appearance of pathologic changes in the right femur). After a thorough examination he decided to perform a parathyroidectomy. There was no postoperative effect whatever. Later, to save the patient's life, the author was forced to exarticulate the left femur. His results differ from the favorable results of parathyroidectomy reported by Mandl, Gold, Wilder and others. There are other osseous processes that are directly opposite to the processes of decalcification or porosity of bones; they occur in patients in whom one notes excessive deposits of calcium in tissues with newly formed bone tissue. The first place among them is occupied by ankylotic polyarthritis. Hence there are in the system two different processes: a process of excessive elimination of calcium and a process of equally excessive arrest of elimination. Both are connected with functional changes of the parathyroids. This is perhaps already established by clinical observations and by laboratory investigations. But the details of these processes are still obscure. The author's associates performed a series of investigations in their studies on the metabolism of chlorides. They began these investigations by producing an experimental

obstruction of the intestine in animals. Dogs with an experimentally produced impassability of the gastro-intestinal tract died sooner than dogs that were subjected to complete starvation. The author thinks that besides pulmonary, cutaneous and branchial breathing there has to be some kind of gastro-intestinal breathing supplementing the pulmonary respiration. With experimentally produced impassability of the gastro-intestinal tract there develops a marked hyperchloremia. The animals (rabbits) die from anaphylactic shock. As is well known there is always hypochloremia in persons with diabetes mellitus. The author's conclusions are as follows: There are conditions of hypoglycemia and hyperglycemia, of hypocalcemia and hypercalcemia, of hypochloremia and hyperchloremia. Some of these conditions are connected undoubtedly with functional changes in the endocrine glands.

Causes of Death in Acute Obturation of Gastro-Intestinal Tract.—Samarin studied obturation of the gastro-intestinal tract in connection with blood biochemistry. There are three types of intestinal obturation: (1) supra-intestinal, (2) high and (3) low. The experiments performed demonstrated that there are more chemical changes in the blood in high intestinal obturations, i. e., in obturations of the pylorus, duodenum and the small intestine. In supra-intestinal and low intestinal obturations the changes are fewer and they are not so prominent. The author states that there are two main causes that provoke pathologic changes in ileus: (1) the abnormally increased secretions and excretions and (2) hunger. Losses of gastro-intestinal contents always occur during the vomiting that accompanies ileus. With vomitus there is a loss in secretions, water, salts, ferments and the rest of the gastro-intestinal contents. With excessive loss of secretions there is going on also an excessive dehydration and dechloridation of the system, especially the latter, which is assisted by the excessive elimination of chlorides in the urine. The mechanism of hypochloremia in high intestinal obturations will be clearer if one takes into consideration the well established fact that the greatly distended intestines lose their power of absorption. On this account it will be also easier to understand why there is a normal content of chlorides in the blood in low intestinal obturations: because absorption in these cases gets disordered only at the end of the life of the experimental animal. In the obturation of the cardia or of the esophagus (in the obturation of the stomach the dechloridation is minimal) there is no vomiting; there is no loss; therefore there is no decrease in the level of chlorides in the blood. Extreme dehydration leads to rapid coagulation of blood, which in turn brings on an excessive increase in the nonproteins. The alkali reserve also increases, being the direct consequence of the loss in chlorides. The second cause that provokes highly complex changes in an organism with a complete obturation of the gastro-intestinal tract is hunger, partial or complete. These facts clearly demonstrate that in low intestinal obturations there are still going on some processes of assimilation, no doubt not without any disorders; however, complete hunger begins only when there has been established a reverse peristalsis, in the case the blind tract is filled to the maximum. The physiologic process of food movement from the oral to the aboral end changes to a pathologic one, from the aboral to the oral end. There were observed also such phenomena as distention of the intestines and the arrest of absorption; hence the process of assimilation is out of question and there is a complete hunger. The higher the obturation, the sooner begins the hunger. The author proposed sometime ago a theory that in case there is an insufficient amount of air (oxygen) in the gastro-intestinal tract there begins the formation of anaerobes that normally are never present in the higher segments of the tract. With an excessive propagation of micro-organisms there develops a marked toxemia. The air that is ingested from outside passes through the stomach and reaches the small intestine, where it is used for some as yet unknown needs. One finds in the small intestine oxygen, carbon monoxide, nitrogen, hydrogen, methane and other gases. They come partly from the gases of the stomach and partly from gases that diffuse through the mucosa; but their main source is fermentation. There is no oxygen either in the large bowel or in the rectum; hence the oxygen swallowed with saliva or with food is applied for some needs in processes of gaseous metabolism that supervene in the gastro-intestinal tract. The death from ileus of the esophagus or of the cardia is caused by complete hunger, including in that term the new type of it, the aerial (pneumatic) hunger. With the beginning of this type of hunger there develops in the system some toxins the nature of which is still unknown. Especially highly poisonous becomes the mucous membrane of that part of the gastro-intestinal tract which is just above the obturation. The organs of internal secretion that are severely affected by the disorders of the gaseous intestinal metabolism are those that take the main part in this systemic intoxication, or it is a plain bacterial intoxication or probably an intoxication that is caused by the putrefaction of tissues. All these questions still await further investigation and study.

Puncture of Lymph Nodes in Syphilis.—Barshev states that modern views on the treatment of syphilis require an early diagnosis that leads to an early treatment. In this direction he examined for *Spirochaeta pallida* the punctate of lymph nodes that were nearest to the seat of the chancre. Eighty-five cases of syphilis were investigated, among them 42 of primary infection, 15 of early secondary syphilis, 9 of recurrent secondary syphilis, and 16 cases suggestive of chancre. The author describes in detail his technic and the method of differentiation between the true *Spirochaeta pallida* and the pallida-like saprophytic spirochetes. In forty-two cases of primary active syphilis, *Spirochaeta pallida* was found in the punctate of the lymph nodes twenty-eight times (66.7 per cent) and in the tissue fluid aspirated from the ulcers of forty persons twenty-four times (60 per cent). In fifteen persons with early secondary syphilis, *Spirochaeta pallida* was found in the punctate of seven (40 per cent) and in nine cases of recurrent secondary syphilis in four (44 per cent). In sixteen persons who were suspected of having primary sclerosis, the examination of their punctate as well as of the aspirated fluid (from the ulcers) gave negative results. The diagnosis was correct in all cases except one, because it was verified by further clinical observations and by the serologic observations. The author concludes by emphasizing that the punctate of the lymph nodes is an excellent object for the study of such an important problem as the morphology of the exciting agent of syphilis.

Vrachebnoe Delo, Kharkov

14: 1-104 (Jan. 31) 1931

Rôle of Endocrine Glands in Distribution of Blood in Organism. N. A. Kabanov.—p. 9.
*Cholesteremia in Certain Diseases of Endocrine Glands. M. L. Hillmann. —p. 13.
Immediate and Late Results of Induced Abortion. S. Verkhratsky.—p. 17.
Epidemic Encephalitis: Atypical Forms. E. M. Steblov.—p. 22.
*Oleotherapy in Crepitant Tendovaginitis. C. J. Mtvarelidze.—p. 25.
Pick-Niemann Disease. S. J. Schaferstein.—p. 27.
*Presence of Spirochaeta Pallida on Apparently Intact Tonsils. J. M. Tsherbakov.—p. 32.

Cholesteremia.—Hillmann reports his studies on cholesteremia in certain disorders of the endocrine glands, chiefly of the thyroid. Twenty persons were examined: twelve with exophthalmic goiter (all women with the exception of one) and the rest with various other endocrine disorders. In exophthalmic goiter the figures for the cholesterol content were below normal in five cases and slightly above normal in six cases. In all cases of hypothyroidism the cholesterol content of the blood was above normal. Cholesteremia is higher in old persons than in young or middle-aged ones. The author concludes by stating that cases characterized by lowered function of the thyroid present a higher cholesterol content of the blood. In regard to exophthalmic goiter there was no regularity observed. The data obtained by the author in his studies on cholesteremia cannot be used either for diagnostic or for prognostic purposes. The material investigated was too limited to enable one to draw any definite conclusions in this direction.

Oleotherapy in Crepitant Tendovaginitis.—Mtvarelidze treated five patients having crepitant tendovaginitis with injections of liquid petrolatum into the affected region of the forearm, mostly in its lower third, the seat of its predilection. He describes his technic, which is simple. The results obtained were highly favorable. The author did not observe either general or local reactions. The average period of disability was not over ten days.

Spirochaeta Pallida on Intact Tonsils.—In his researches on the presence of *Spirochaeta pallida* on apparently healthy tonsils, Tsherbakov carried out 125 investigations on 100 persons, of whom 48 were men and 52 were women. Among these 100 persons, 88 were affected with syphilis, 10 with various other diseases (herpes progenitalis, chancroid) and 2 healthy women who were exposed to syphilis by syphilitic persons in their families. These twelve persons were studied not as controls only but probably also for the discovery of latent forms of syphilis with a negative Wassermann reaction. The author's conclusions are as follows: 1. By means of constrictive hyperemia, one may find *Spirochaeta pallida* in from 14 to 15 per cent of patients with latent secondary syphilis, whose tonsils are without any macroscopic changes. 2. *Spirochaeta pallida* may be found also on intact tonsils in persons with secondary syphilitic phenomena in other parts of the body (17 per cent). 3. The presence of *Spirochaeta pallida* may precede the development of a pustulous tonsillitis; this will help in cases that are difficult to recognize as well as it will facilitate the finding of small pustules hidden in the depths of the tonsillar crypts. 4. It was impossible to find *Spirochaeta pallida* twenty-four hours after the first administration of neoarsphenamine, whereas the action of mercury was much weaker and not so permanent. 5. By employing as a routine the method of passive hyperemia one may obtain enough material in which besides *Spirochaeta pallida* one may find *Spirochaeta buccalis* and *Bacillus buccalis-maximus*. This method is in all respects better and more convenient than the method of puncture of the tonsil.

14: 105-208 (Feb. 28) 1931

*Analysis of Icterus Gravis. P. A. Barkhash.—p. 115.
*Diagnosis in Vivo of Thrombi and Emboli of Coronary Arteries and Their Branches. G. J. Katz.—p. 121.
*Changes of Tonus of Autonomic Nervous System in Pregnancy. A. J. Scheinmann.—p. 124.
Traumatic Rupture of Gastro-Intestinal Tract. G. G. Simitschenka.—p. 131.
Eventratio Diaphragmatica. R. A. Davydova-Kandyba and F. D. Schenfeld.—p. 134.
*Researches on Treatment of Rickets with Various Antirachitic Agents. P. S. Medovikov, J. A. Trotzkaya and Z. P. Galyukova.—p. 137.

Icterus Gravis.—Barkhash reports a case of acute and a case of subacute yellow atrophy of the liver. Both ended fatally. He discusses various opinions on the subject and reviews the literature, stressing the marked increase of this ailment since the World War. After giving the case histories as well as the pathologico-anatomic observations in the necropsies performed, he concludes as follows: 1. The clinical picture and pathologic anatomy of acute and subacute yellow atrophy of the liver demonstrate that for the appearance of jaundice there is not necessary either the presence of angiocholitis or an obstruction of the biliary tract. 2. On account of the close similarity of this ailment with simple catarrhal jaundice, Weil's disease and yellow fever, one may assume that their pathogenesis has no connection with the diseased biliary tract. 3. The pathogenesis of types of jaundice from the simple form to acute yellow atrophy of the liver is based exclusively on the lesions of the hepatic cells that begin with simple chemicophysical changes and reach finally, through various forms of hepatitis, the stage of complete necrosis. 4. One can see in the advanced cases of acute yellow atrophy of the liver that bilirubin may be produced (and even in large quantities) in other places besides the liver (in the blood and in the reticulo-endothelial tissue). 5. Minkowski's assertion that "Without the liver there is no jaundice" must be paraphrased as Without the liver not only jaundice but even the formation of bilirubin is possible. 6. Aschoff is right in that part of his assertion in which he said that for the formation of bilirubin hepatic cells are not necessary. However, the problem of the possibility for normal hepatic cells to produce bilirubin or the question whether their function in regard to this pigment is only an excretory one (Froin, Brule, Brugsch) still remains unsolved. There is no connection between these cells and the Kupffer cells, the rôle of which in the production of bilirubin is indisputable (Geraudel, van den Bergh, Brugsch). 7. In the presence of a grave form of jaundice with rapidly developing ascites, hemorrhages and enlarged spleen but without lesions to the central nervous system, one may consider a subacute form of yellow atrophy of the liver, an entity that as yet has not been studied enough.

Diagnosis of Thrombi and Emboli of Coronary Arteries.—Katz studied the problem of the recognition in vivo of thrombi and emboli in the coronary arteries and their branches. He states that, although this problem was studied for years and in detail, it still attracts the attention of many scientists. He reviews the researches carried out in this connection mostly by the Russian authors and concludes as follows: The symptom of the faint heart tones is a function of several changeable currents and thus constitutes a variable current. It cannot be employed, therefore, as a constant sign for the topographic diagnosis of either one of the coronary arteries or of their branches.

Tonus of Autonomic Nervous System in Pregnancy.—Scheinmann studied the changes of the tonus of the autonomic nervous system in pregnancy in seventy-five cases. He reviews various methods proposed for such studies but finally decides that the method of Daniélopolu is the best. The author's conclusions are as follows: 1. The investigation has to be performed in the same women and by the same method during pregnancy and after it. The latter must be done only after the restoration of the menstrual function. 2. The method of Daniélopolu is characterized by its technical simplicity and harmlessness. However, there are some contradictions in the theory proposed by him. The author encountered such contradictions during his investigations and states that the theory of Daniélopolu does not explain them clearly. 3. The number of pregnant women with hypo-amphotony increases in the first three months of pregnancy almost in half, chiefly on the account of the decrease in the normotonic pregnant women. 4. In the first three months of pregnancy there is a tendency to a decrease in the tonus of the autonomic nervous system. 5. The average total dose of atropine administered must be slightly higher for nonpregnant women; pregnant women have more tolerance to atropine than nonpregnant ones. 6. Marked changes in dermographism were not observed during the first three months of pregnancy. 7. There was also no regularity in Aschner's symptom in regard to different types of autonomic nervous system, asserted to be present by Daniélopolu; this symptom did not give any changes in the first three months of pregnancy either.

Treatment of Rickets.—Medovikov and his associates studied the action of various antirachitic agents on seventy rachitic children. Their conclusions are as follows: 1. The direct and the modified ultraviolet irradiation is a powerful factor in the treatment of rickets; it should be employed in each case in which it is accessible. 2. Direct irradiation with a mercury quartz lamp gives the best clinical and biochemical effect. 3. Viosterol, various kinds of irradiated powdered milk and cod liver oil gave much less effective results in the order enumerated. 4. Viosterol has no favorable effect on pneumonia. Many children with anemia improved under viosterol, probably because they were simultaneously given vitamin C; however, in general, antirachitic substances have no effect on anemia. 5. It is suggested that all irradiated substances (viosterol and others) should be labeled as to the date of the expiration of their optimal action. 6. There was noted in some cases a constitutional intolerance to viosterol.

Hospitalstidende, Copenhagen

74: 461-488 (April 23) 1931

Zondek-Aschheim Pregnancy Reaction. K. Portman.—p. 461.
*Two Cases of Syphilitic Hepatitis. G. Herborg.—p. 468.
*Phlebitis and Venipuncture. E. Bay-Schmith.—p. 476.
Case of Cancer of Stomach with Metastasis to Right Broad Ligament (Atypical "Krukenberg's Carcinoma"). C. C. Stochholm-Borresen.—p. 483.

Two Cases of Syphilitic Hepatitis.—Herborg's cases were originally diagnosed as cholelithiasis. The dominating symptom was sudden, marked, colic-like pain along the lesser curvature. The temperature was constant. There was slight jaundice, in one case constant, in the other variable. The roentgenogram in the first case suggested gallstones. The Wassermann reaction was positive in both cases. The absence of any relation between pain, urobilinuria, and bilirubinemia pointed to hepatitis rather than gallstones. At an exploratory laparotomy, gallstones were excluded. Arsphenamine treatment gave good results.

Phlebitis and Venipuncture.—Bay-Schmith states that his material of 42,222 patients for sixteen years with 302 cases of phlebitis showed an increase in phlebitis during the second eight years. Phlebitis was not especially frequent among surgical patients. Changes in the size and location of the uterus predispose to phlebitis; diseases of the adnexa do not. Periodic occurrence of phlebitis was noted with peaks in 1916, 1923 and 1929. As general examinations of the blood were made only in 1917 and 1918 and 1929 the material affords no evidence that venipuncture predisposes to phlebitis.

74: 489-516 (April 30) 1931

*Ratin Infection in Man. M. Kristensen and K. Bojlén.—p. 489.
Case of Ratin Poisoning. A. Fly.—p. 502.
Various Forms of Dental Osteitis. M. Melchior.—p. 504.

Ratin Infection in Man.—Kristensen and Bojlén describe ten outbreaks of acute gastro-enteritis (one or more cases) in which Gärtner's bacilli were demonstrated in the feces. In two of these outbreaks, consisting of one fatal and three grave cases, respectively, ratin is considered as the source of infection and in the remaining eight it cannot, they say, be disregarded as a possible source of infection. They also cite several cases of certain or probable ratin infection reported by others.

74: 517-544 (May 7) 1931

*Comparative Blood Examinations on Volume Index in Insane and in Sane Persons. A. Hofman-Bang.—p. 517.
Etiology of Prolapse. T. Schultz.—p. 530.

Volume Index of Erythrocytes in Insane and in Sane Persons.—Among sixty-five persons with mental diseases, Hofman-Bang found thirteen with hyperchromatic anemia, six with achylia and seven with normal acidity; one or possibly two had pernicious anemia. He believes that pernicious anemia is hardly more frequent in the insane than in normal persons, but hyperchromatic anemias of other kinds may perhaps occur more often in the insane. In two or three cases he sees a possible connection between hyperchromatic anemia and psychosis. There was no parallelism between the mental condition and the size of the erythrocytes.

74: 545-572 (May 14) 1931

*Diabetes and Pregnancy. J. M. Wollesen.—p. 545.
Hyperproteinemia and Multiple Bone Tumors. A. H. Johansen.—p. 562.
Presentation of Vitamin E Preparations and Therapeutic Applicability in Man (Habitual Abortion) and Domestic Animals (Sterility). P. Vogt-Møller.—p. 567.

Diabetes and Pregnancy.—Wollesen's case shows that diabetic gravidas may bear healthy children. His patient had diabetes before pregnancy. During two hypoglycemic phases during pregnancy she could not notice quickening; otherwise the insulin therapy was well borne by mother and child. Breast feeding did not noticeably affect the blood sugar.

74: 573-600 (May 21) 1931

*Irregular Glandular Hyperplasia of Endometrium. S. Franck.—p. 573.
Is Blood Type of Significance in Choice of Spouse? O. Thomsen.—p. 585.
*Case of Chronic Atrophy of Liver. T. Geill and V. Riemke.—p. 589.
*Case of Aleukemic Lymphadenosis Beginning as Disorder in Upper Respiratory Passages. H. Videbech.—p. 594.

Irregular Glandular Hyperplasia of Endometrium.—In thirty, or 10.4 per cent, of 287 nonpregnant women with diseases of the endometrium in which excochleation was done, Franck found the changes in the mucous membrane designated as irregular glandular hyperplasia of the endometrium (Kjærgaard). He states that the only symptom is irregular, frequently profuse hemorrhages. The disorder is benign but often recurs after curettage, presumably because the changes in the mucous membrane are due to disturbances in ovarian functioning. Roentgen treatment is effective; more than one treatment may be necessary.

Case of Chronic Atrophy of Liver.—Geill and Riemke report a case of chronic cachexia together with jaundice, in which cancer in the bile ducts seemed most probable. Exploratory laparotomy revealed a pathologic condition of the liver regarded as chronic atrophy of the liver (Bergstrand).

Case of Aleukemic Lymphadenosis Beginning as Disorder in Upper Respiratory Passages.—Videbech states that acquaintance with this rare disease is of practical value because (1) the localization in the upper respiratory passages may be the first or most noticeable clinical manifestation of the leukosis and thus lead to diagnosis and (2) timely diagnosis may forestall extensive operative interventions. The blood picture in aleukemic cases may be qualitatively normal or but slightly changed.

74: 601-644 (May 28) 1931

*Gee's Disease: Intestinal Infantilism. T. E. H. Thaysen.—p. 601.
*Acute Mastoiditis Without Manifest Suppuration in Tympanic Cavity. H. Hvidberg.—p. 641.

Gee's Disease: Intestinal Infantilism.—Thaysen states that although the etiology of tropical sprue, nontropical sprue, and intestinal infantilism is doubtful, he believes it justifiable to maintain that diseases which show such agreement in origin, course, symptomatology and pathologic anatomy, probably also pathogenesis, must be identical; their prognosis also seems equally grave. At the start of the disease the diagnosis is difficult because of the insidious development from more or less characteristic disorders of the intestine and because the main symptom, the steatorrhea, only gradually becomes marked. In the differential diagnosis the demonstration of a marked azotorrhea and a diabetic blood sugar curve with glycosuria or one of these symptoms is usually sufficient for the diagnosis of pancreatogenic steatorrhea, and the hyperchromatic anemia, low blood sugar curve, and increased basal metabolism of Gee's disease has not yet been established in other forms of steatorrhea.

Mastoiditis Without Manifest Suppuration in Tympanic Cavity.—In this form of mastoiditis described by Hvidberg the symptoms are headache, heaviness in the head, and tenderness in the mastoid region. Paracentesis, if performed, is not followed by purulent discharge. Roentgen examination often allows early diagnosis. The condition occurred in 9 out of 201 cases of acute mastoiditis treated in 1930. The prognosis seems good, as there have been no labyrinthine or intracranial complications.

Upsala Läkareforenings Förhandlingar, Uppsala

36: 147-296 (May 22) 1931

*So-Called Transvesical Prostatectomy: Clinical Study. S. Richter.—p. 147.
Question of Color of Central Macula of Retina. J. W. Nordenson.—p. 267.
*Preaxial Polydactylism in Five Generations of Swedish Family. E. S. Nylander.—p. 275.
Chemistry of Fermented Baltic Herring. C. T. Mörner.—p. 293.

So-Called Transvesical Prostatectomy.—In Richter's material of 682 cases of prostatic disorders, 425 transvesical prostatectomies were done in 424 patients, of whom 105 were 81 years of age or more. In 5 cases there was no tumor; in 378 the tumor was benign and in 42 malignant. His method consists in blunt forcing of the internal urethral orifice by inserting the index finger, operation without the aid of sight, regular tamponade, and suprapubic drainage, without irrigation or postoperative probings. Parasacral anesthesia was effective in 98 per cent of the cases. No cases of stricture or incontinence resulted. The total number of deaths after prostatectomy in cases with hypertrophy was 9.1 per cent, after cystostomy 45 per cent, after vasectomy and nonoperative treatment 34 per cent. Reexamination showed a higher death rate and greater morbidity in patients without radical operation than in those with prostatectomy. Routine vasectomy is advised to prevent epididymitis. Prostatectomy in two stages is not recommended. The incidence of cancer was 14.8 per cent. The author urges that the possibility of cancer be considered among the indications for prostatectomy. Every patient with prostatic hypertrophy who has not been operated on should be kept under regular supervision. Eleven pages of bibliography are given.

Preaxial Polydactylism in Five Generations.—Nylander compares the Norwegian family with polydactylism of the postaxial type in thirty-five cases in five generations (Sverdrup) and his Swedish family with polydactylism of the preaxial type in forty-one cases in five generations. He states that these cases and those reported in the literature in the main point to dominant inheritance. Whether the percentage of bearers of the anomaly diminishes in each new generation cannot be definitely determined, but the tables show that normal members always have normal children.

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